

# **HP 150 Personal Computer Owner's Guide**



**HEWLETT  
PACKARD**

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# Chapter 1

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## INTRODUCTION

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Hewlett-Packard's HP 150 is a personal computer with two personalities. Your HP 150 can function as a self-contained computer, using VisiCalc, WordStar, Series 100/ Graphics and other applications programs you associate with personal computing. This manual tells you how to use your HP 150 as a computer.

The HP 150 can also function as a terminal, giving you the same performance and reliability that HP terminals have always provided. Another manual, the *HP 150 Terminal User's Guide*, provides the information on using the HP 150 as a terminal.

## How To Use This Manual

The rest of this manual contains information on the operation of your HP 150.

### **Chapter 2** Installing Your Equipment

Read Chapter 2 to set up your HP 150, disc drive, printer, plotter, and accessory board(s).

### **Chapter 3** Using Your Equipment

Read Chapter 3 to find out what your equipment is designed to do, and what to expect from it. Find out how much memory you need, what a plotter is used for, how to use a printer, and more.



## **Chapter 4 Files**

Chapter 4 explains files. How is information created? How is it stored? What do I name a file? How do I use HP 120/125 files on an HP 150?

## **Chapter 5 P.A.M. - The Personal Applications Manager**

In Chapter 5, learn about P.A.M., the manager that keeps in touch with everything on your system. Let P.A.M. run applications and perform commands for you with File Manager.

## **Chapter 6 Applications**

Find out about applications in Chapter 6. What are they? How do I put them into P.A.M. so that P.A.M. runs them? How do I make my favorite application appear on the screen every time I turn on my drive and computer?

## **Chapter 7 Discs**

Chapter 7 explains how to prepare a disc for first time use (FORMAT), how copy or back up a disc, and how to take care of your discs.

Hewlett-Packard has given you some programs (on the Disc Applications disc) to format and copy your discs.

## **Chapter 8 Issuing Commands From MS-DOS**

The MS-DOS operating system has many commands; most of these are shipped to you on your operating system disc. (Some come with the Programmer's Pac.) P.A.M. performs the most common of these commands for you when you touch the screen. However, Chapter 8 gives a brief description of each command sent on the OS disc, and tells you how to issue them.

## **Appendix A Configuration**

The HP 150 is a versatile computer. There are choices you can make to tailor it to your exact needs. The choices are made in the Configuration Menus, as described in Appendix A.

MS-DOS is also versatile; it has its own configuration choices, as described in Appendix A.

## **Appendix B Keyboards**

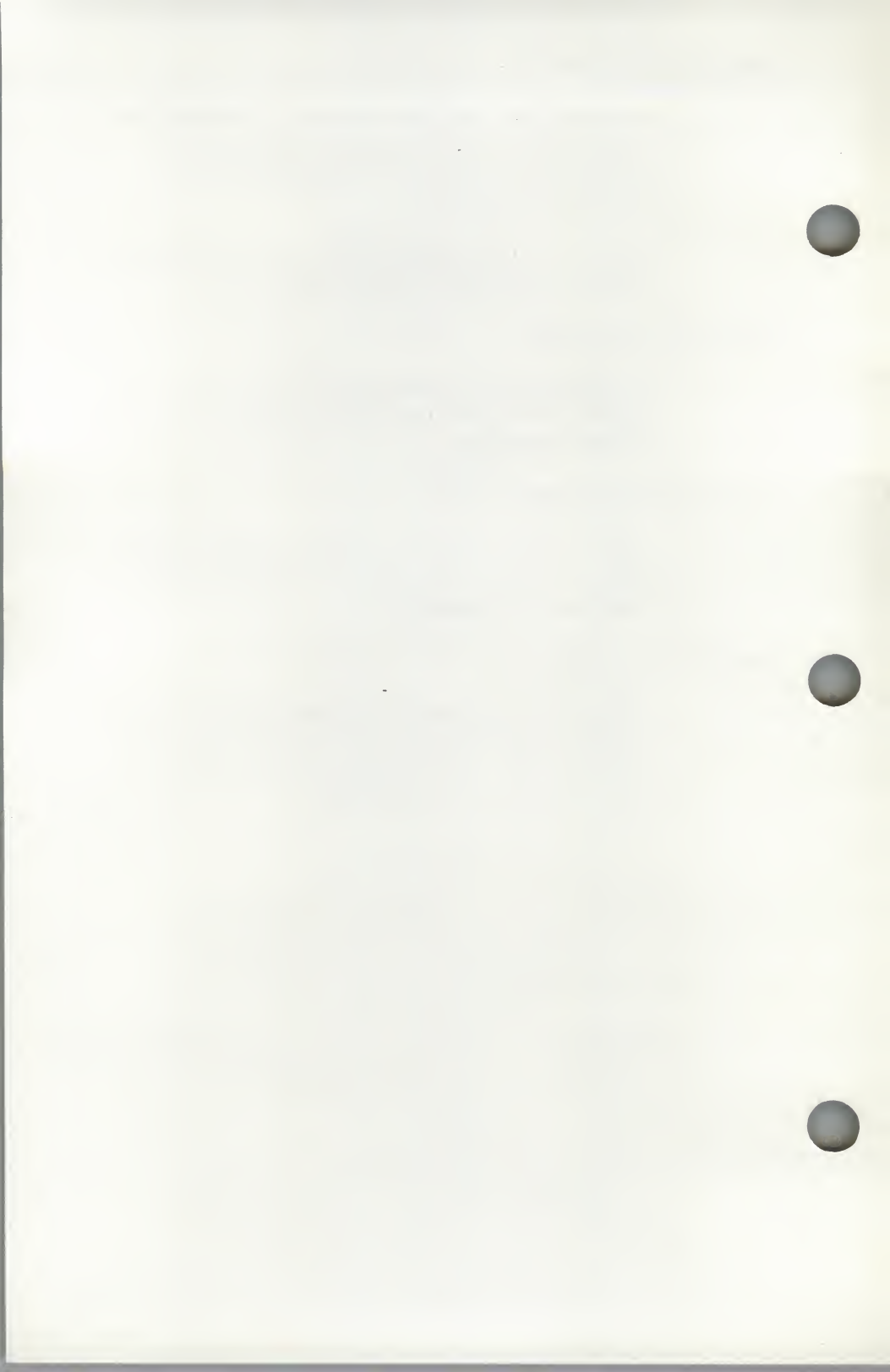
See Appendix B for drawings of the math symbol set, the line drawing set, the Roman 8 character set, and all foreign keyboards.

## **Appendix C Maintenance**

Find out how to change the backup battery, clean and adjust the touch screen, and generally take care of your equipment in Appendix C.

## **Appendix D Error Messages**

When the computer gets confused, it issues a message to tell you what it thinks the problem is. Appendix D tells you what those messages are, the possible cause, and the remedy for the problem.



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### **NOTE**

Before installing each part of the system, be sure to read the entire procedure for installing that component. Be sure you understand all of the steps in the procedure before you try installing any piece of equipment. If you have any questions, contact the person from whom you purchased your system before you try to install that part of the system.

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### **What About My Work Environment?**

Hewlett-Packard's Series 100 Computers are designed to operate in a typical office setting.

Even though there are no extensive preparations that need to be made for your HP 150 Personal Office Computer, you should give some thought to the area in which you install your computer system. Recommended temperature and humidity levels, along with electrical considerations (such as radio or electrical interference) are discussed in the appendix on "Maintenance".

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### **CAUTION**

**DO NOT USE EXTENSION CORDS UNDER ANY CIRCUMSTANCES.** Such use may result in data errors and increase the risk of safety hazards. If you wish to use a multiple outlet strip to plug in the components of your system, you must use one which utilizes grounded three-prong outlets and incorporates a circuit breaker.

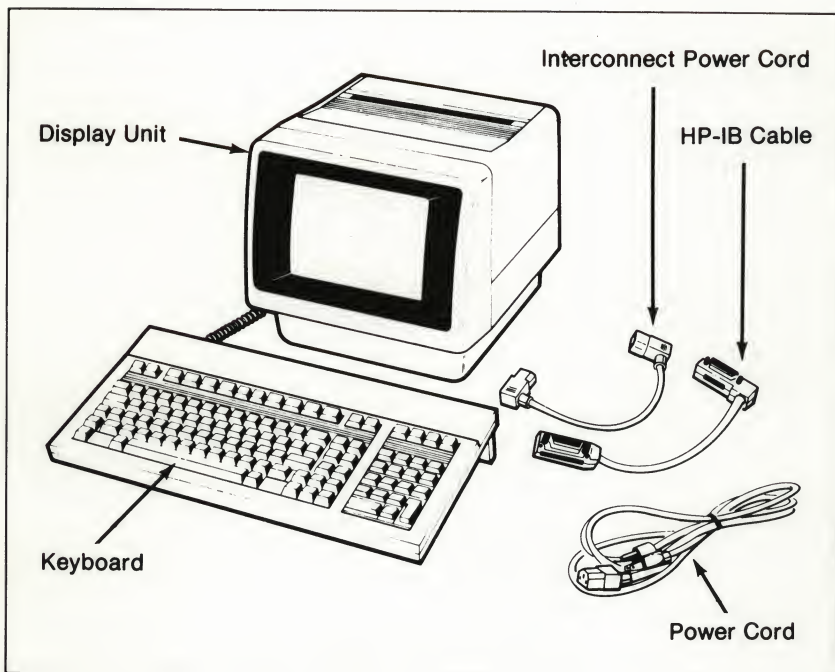
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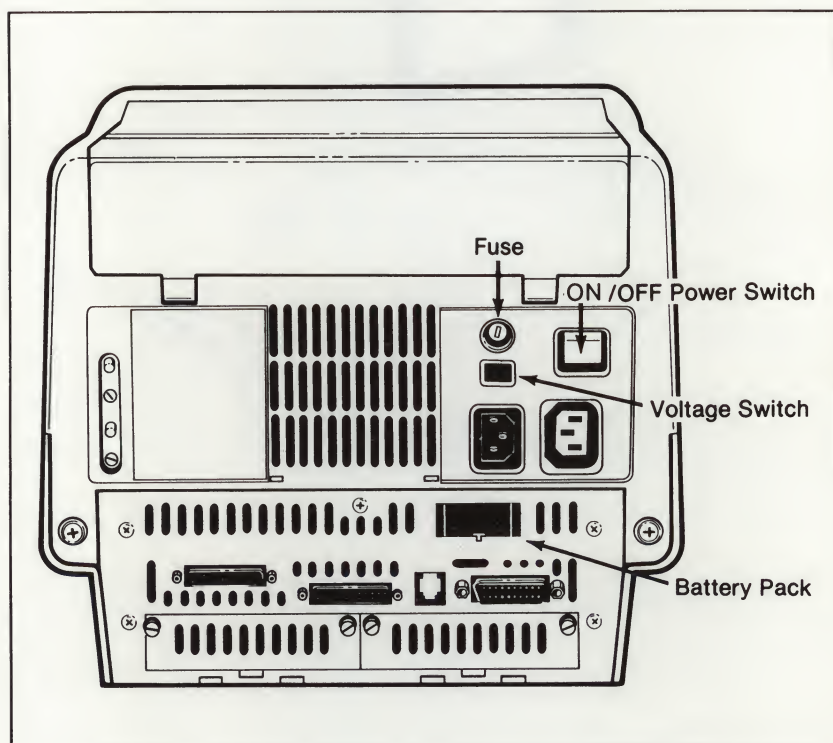
# Installing the System Processor

The first component of the HP 150 you install is your system processor. The system processor includes the following:

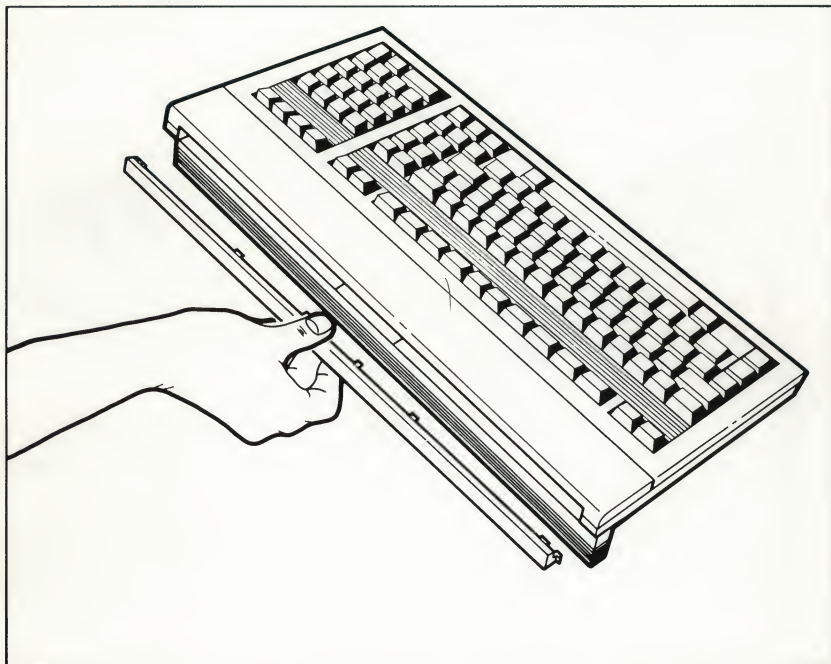


Install your system processor as follows, using the illustration below:

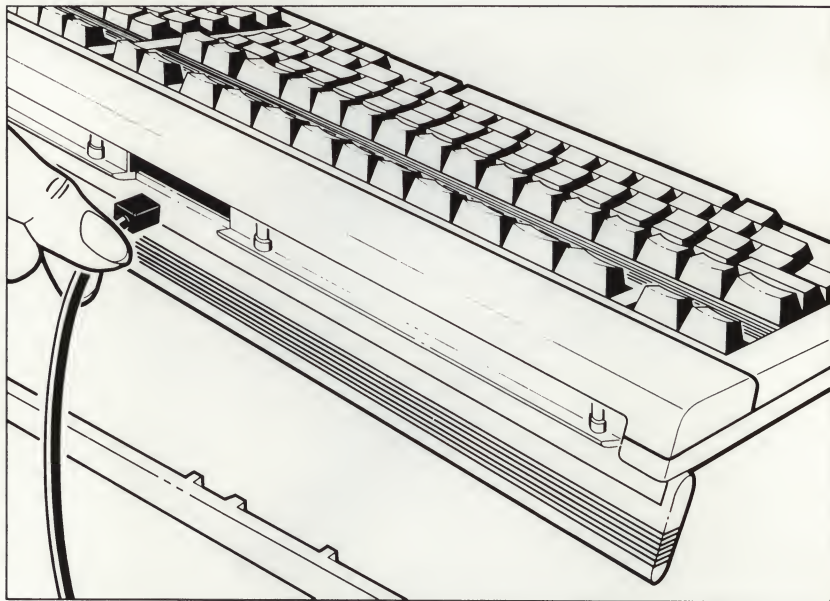
1. Set the power switch on your display unit to the OFF position.
2. Make sure the fuse is installed and the voltage switches are set according to the voltage in your area. (Check with your local electric company to be sure. For installations in the U.S., the switch on the rear panel should be set to 115 volts.)
3. Check that the battery pack is securely installed in the rear panel of the display unit.



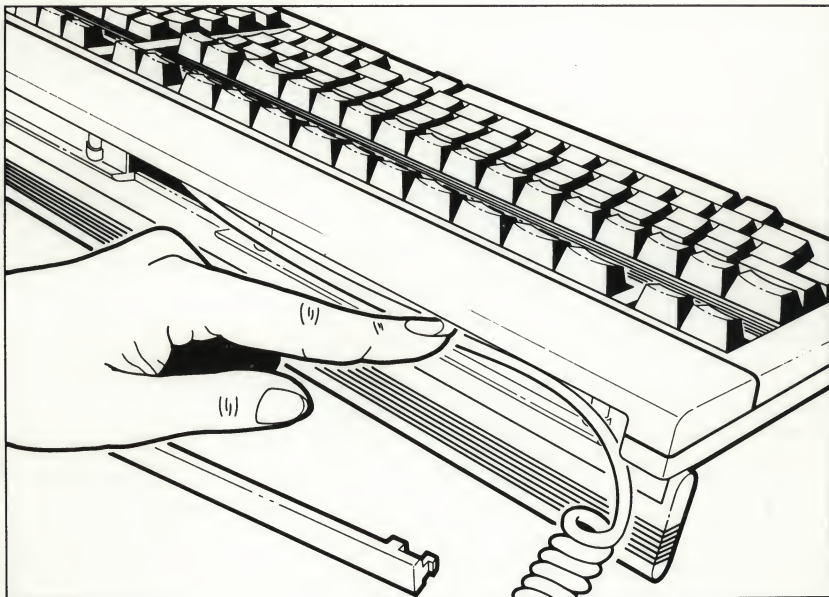
4. Connect the keyboard to the display unit as follows:
  - a. Remove the keyboard cable cap at the back of the keyboard by gently squeezing the cap in the center and pulling straight out.



- b. Unwrap the cable. Take the longest flat portion of the cable and plug the connector into the jack at the rear of the keyboard (recessed in the center back).



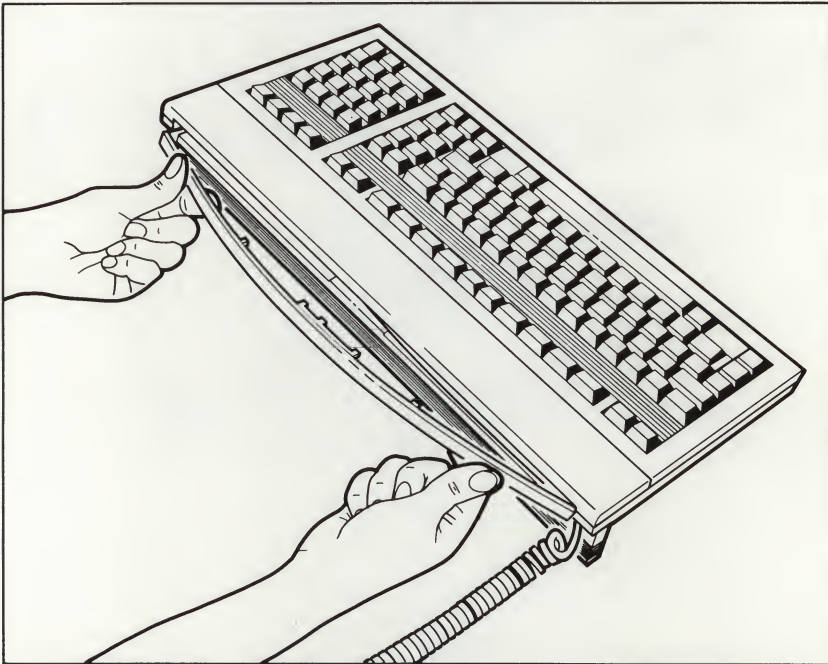
- c. Place the flat portion of the cable in the cable channel at the rear of the keyboard. Make sure you direct the cable into the slot at the end of the cable channel in the keyboard, as shown in the illustration below:



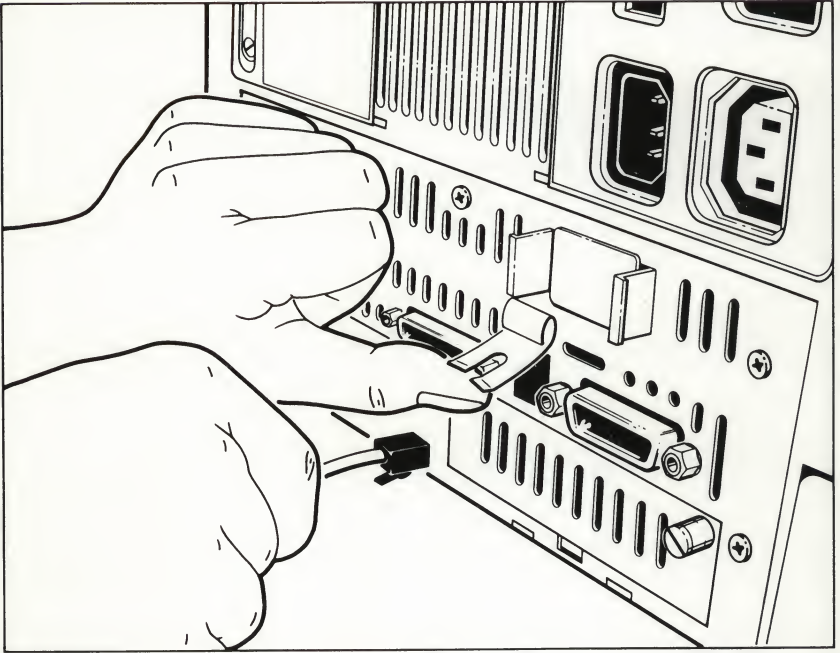


d. Place the cable cap over the channel on the keyboard as follows:

- (1) As you hold the cable in both hands, bend each end towards the keyboard. Tuck in the cap over the cable end first, then snap the other end into place in the back of the keyboard.
- (2) Push in the center of the cable cap until it snaps.



- e. Connect the keyboard cable to the connector on the rear panel of the system processor. Lift the keyboard interface cover and insert the cable plug.



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### CAUTION

To avoid damage to your computer, you must connect the keyboard to the designated keyboard connector **ONLY** on the rear panel. Do not connect telephone line or modem cable connectors to the keyboard connector.


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5. Remove the tape covering the power cord receptacle. Plug the power cord first into the display unit's rear panel, then into the wall outlet, and turn the power switch ON.

## What Happens When I Turn It On?

As the unit warms up, the internal fan quietly turns on. Your HP 150 System Processor automatically initiates a Power-On Self-Test, which takes a few seconds. (This test is performed each time the system is turned on.)

1. If the Power-On Self-Test is successful, the following screen is displayed on your HP 150:



Load Op Sys failed, device not found  
Press RETURN to clear

This message indicates that your personal computer cannot find a disc drive with the Operating System, and you need to simply press Return to clear the screen. You are given instructions on how to connect a disc drive in the next section of this chapter, and how to load the Operating System in the next chapter.

2. If the Power-On Self-Test fails, the following error message appears on the screen:

**Power on test failed** (and a code number)

At this time, call the person from whom you purchased your system and report the error code number displayed on the screen.

If nothing appears, wait another 60 seconds (since new display units sometimes take longer to warm up). If there is still nothing on the screen, check the following:

- You installed the fuse and the voltage setting is correct.
- The system processor power switch is ON.
- The system processor is plugged in.
- The circuit breaker for your power outlet is ON. (You may check this by plugging in a lamp or another electrical appliance into the same outlet.)
- The screen brightness is turned up to the desired level (by adjusting the BRIGHT adjustment on the rear panel).

If you verify each of the above and your system processor still is not working, then you need to call the person from whom you purchased your system.



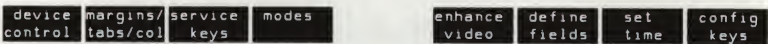
# How Do I Adjust My Display Screen?

Just as with a new television set, you may wish to make some adjustments to your screen. To adjust the focus and brightness, type a few characters on the screen and proceed as follows:

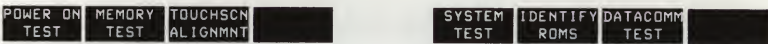
- 1. Adjust the focus using the FOCUS knob on the rear panel.
- 2. Adjust the brightness with the BRIGHT knob on the rear panel.

In addition, since your HP 150 allows you to touch the screen to select the things you wish to do, you may need to align this feature after shipment.

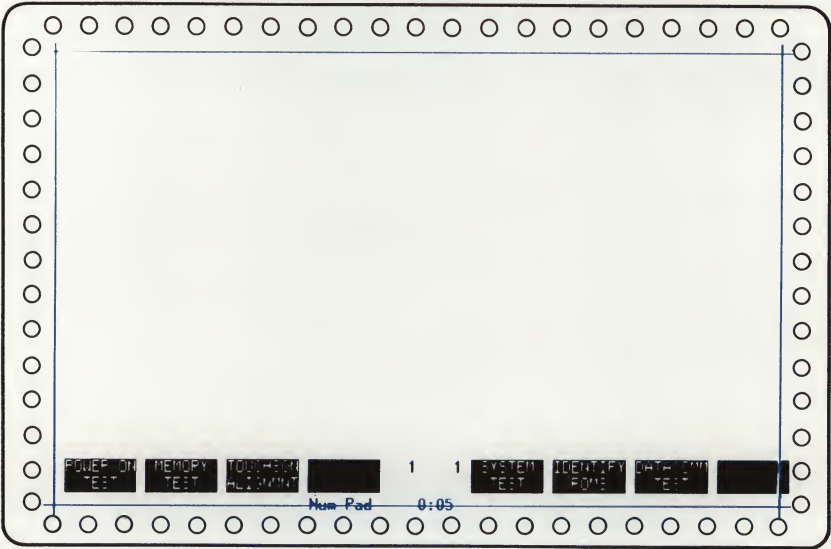
- 1. You must first display an alignment grid as follows:
  - a. Make sure the power switch is ON.
  - b. Press User System twice to display the following function keys:



- c. Press service keys to display the following:

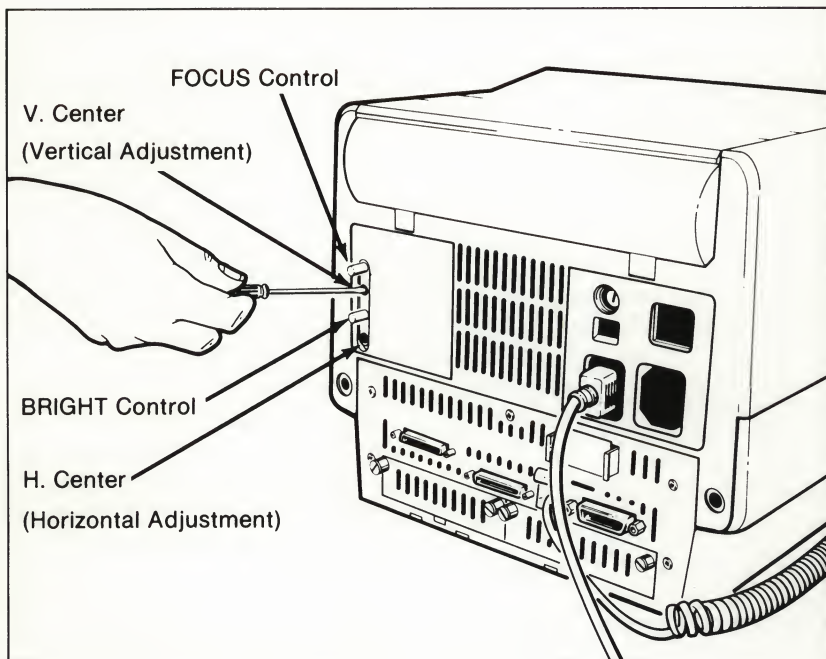


- d. Press TOUCHSCN ALIGNMNT to display the following screen:





2. Adjust the vertical level until the horizontal lines line up with the touch screen holes. Use your screwdriver with the V. CENTER blue adjustment button on the rear panel.



3. Adjust the horizontal level until the vertical lines line up with the touch screen holes. Use your screwdriver with the H. CENTER green adjustment button on the rear panel.

To clear the screen, press CTRL Shift Clear Display at the same time.

## **What's Next?**

Congratulations! You've taken the first step in setting up your personal computer by installing the system processor.

The next section discusses how to connect a disc drive to your HP 150. When you are ready to connect a printer or a plotter, see the following sections (grouped by "shadow tabs") for installation instructions.

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### **NOTE**

If you plan to install an accessory board, do so before connecting your disc drive, printer or plotter. Otherwise, you must disconnect any peripherals before installing an accessory board.

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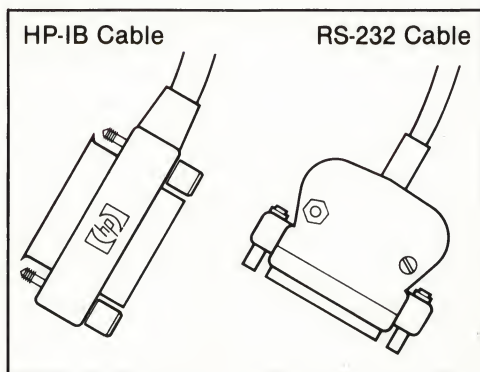
In order to connect a disc drive, printer or plotter, you must attach a cable from the peripheral to the system processor.

## **Which Cable Do I Use?**

There are two different types of cables available:

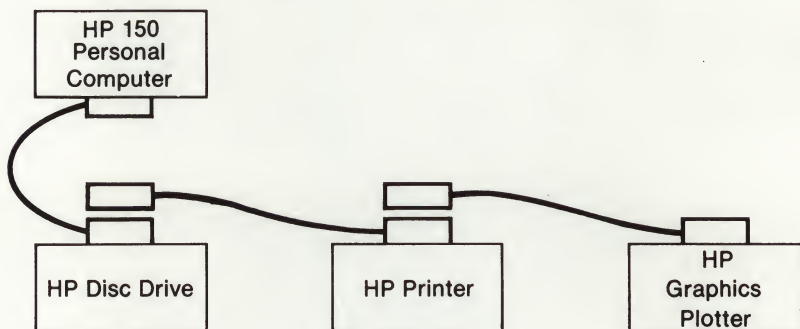
- an HP-IB cable, or
- an RS-232 serial cable

As you can see from the illustration below, the cable ends are significantly different.



Hewlett-Packard disc drives listed in this manual use an HP-IB cable. Your printer or plotter may connect with either one (which you select at the time you purchase the equipment). You may have only one HP-IB printer connected to your system at a time. If you need two printers, however, you may connect a printer using an RS-232 cable and a printer using an HP-IB cable.

Do not connect more than one HP-IB cable to the system processor. If you wish to attach an additional disc drive or a printer using an HP-IB cable, the second peripheral device must be connected to the top of the HP-IB cable on the first peripheral device, as shown below:



# How Do I Install A Disc Drive?

Following is a list of Hewlett-Packard disc drives that you may use with your HP 150 system:

HP 9121D	Dual 3½" Micro Disc Drive
*HP 9121S	Single 3½" Micro Disc Drive
HP 9133A	5 MB Fixed Disc Drive with 3½" Micro Disc Drive
HP 9133B	10 MB Fixed Disc Drive with 3½" Micro Disc Drive
HP 9133V	5 MB Fixed Disc Drive with 3½" Micro Disc Drive
HP 9133XV	15 MB Fixed Disc Drive with 3½" Micro Disc Drive
*HP 9134A	5 MB Fixed Disc Drive
*HP 9134B	10 MB Fixed Disc Drive
*HP 9134XV	15 MB Fixed Disc Drive
HP 9135A	5 MB Fixed Disc Drive with 5¼" Mini Disc Drive
HP 82901M	Dual 5¼" Mini Disc Drive
*HP 82902M	Single 5¼" Mini Disc Drive

## NOTE

\* These disc drives are supported only as add-on drive(s).

Each disc drive comes with its own manual. Be sure to keep the disc drive reference manual, since you may have questions that are not answered in this manual.



## Disc Drive Installation Checklist

Installation instructions for Hewlett-Packard disc drive(s) are discussed in the following pages. However, the steps listed below are common to installing any of these disc drives. In order to install a disc drive, you must:

- prepare your disc drive for installation (install the fuse and set the voltage switch, if not already done)
- set the address switches on your disc drive
- connect the disc drive to your HP 150 via an HP-IB cable
- connect the power cord

These steps are discussed in greater detail below.

1. To install the fuse and set the voltage switch, refer to instructions for your specific disc drive in the following pages. (These settings are usually found on the rear panel of your disc drive.)
2. Set the address switches on the rear panel of the disc drive using a ball point pen or a small screwdriver. An "address" is a label, letter or number identifying the location to which your HP 150 may send and receive data.)

The switches on your disc drive are set according to the address in the MS-DOS Device Configuration Menu. Switch settings are shown for each disc drive in this section, and additional information is provided in Appendix A.

When you first set up your system (and whenever you add or change a disc drive), you'll need to place a letter (A,B,C....etc.) over your disc drive as outlined below:

- **IF YOU HAVE A DUAL FLEXIBLE DISC DRIVE**, place the letter "A" over the drive on the left side of the unit (as you look at the front of the unit). Place the letter "B" over the right drive. (The MS-DOS Device Configuration Menu is set to default to drives A: and B:.)
- **IF YOU HAVE FIXED DISC DRIVE WITH A FLEXIBLE DISC UNIT**, place the letter "A" over the fixed disc drive and the letter "C" over the flexible disc drive. (If you wish to change these addresses, refer to Appendix A.)

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## **Chapter 2**

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# **INSTALLING YOUR HP 150 PERSONAL COMPUTER**

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## **INTRODUCTION**

Installing your HP 150 Personal Computer is as easy as:

- unpacking the components of your system,
- connecting the cables and power cords,
- making a few preparations (such as setting switches, putting ribbon and paper in your printer, etc.)

This chapter guides you through the steps required to install your system. The various components are sectioned by the use of "shadow tabs" at the edge of the pages. (If you did not purchase all of the components, such as a plotter, just skip that section of the chapter.)

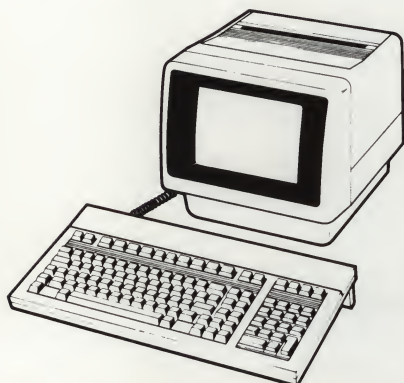
After you set up your system, be sure to read Chapter 3 which discusses the FUNCTION of each of the components, as well as how they all work together.

### **How Do I Get Started?**

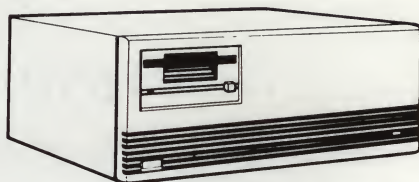
Now that you've unpacked the boxes containing the components of your HP 150, you need a regular flathead screwdriver to set up your system. No other tools are required.

You'll set up your HP 150 Personal Computer in the following order:

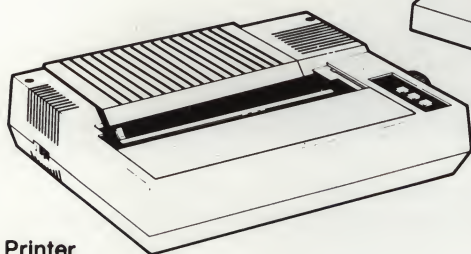
- the system processor (keyboard and and display unit)
- disc drive
- printer
- plotter



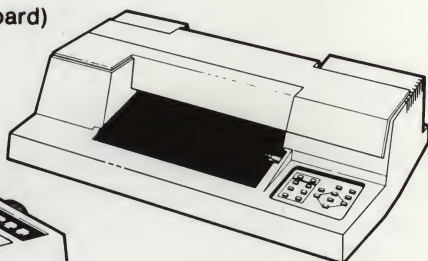
**System Processor (display and keyboard)**



**Disc Drive**



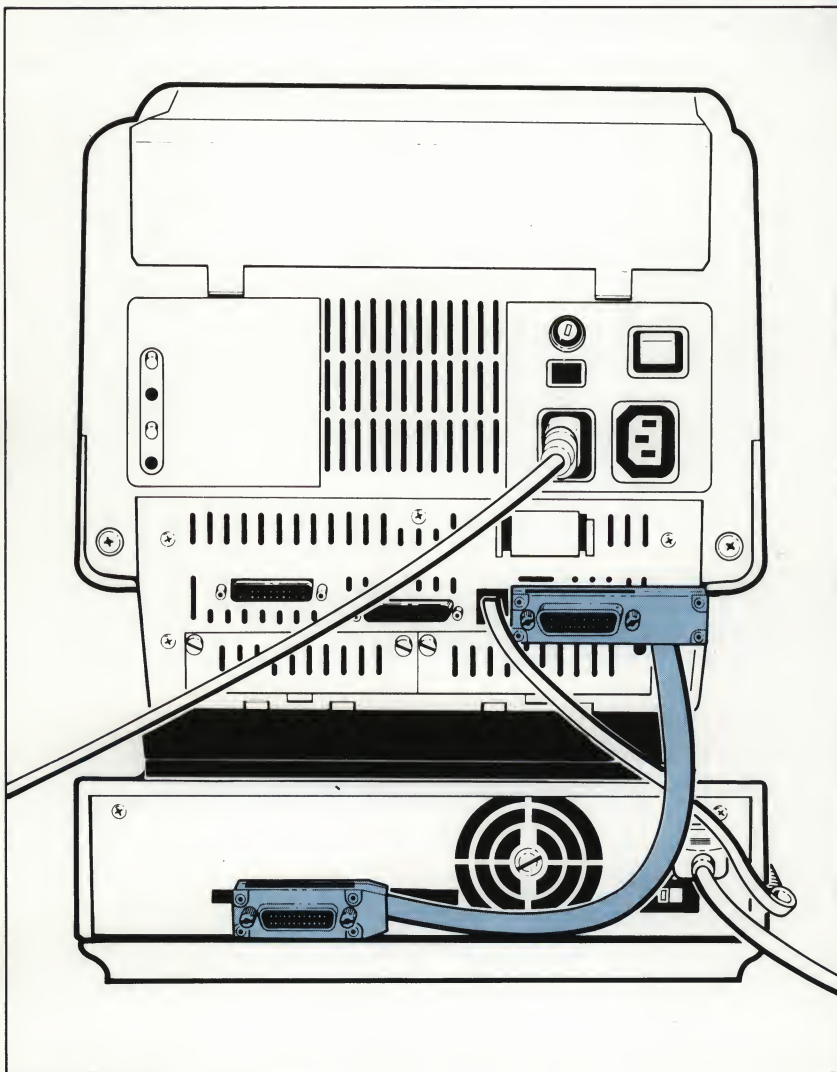
**Printer**



**Plotter**

If you plan to install accessory board(s), do so after you set up your system processor and before you install any peripherals (disc drive, printer or plotter).

- **IF YOU HAVE SINGLE FLEXIBLE DISC DRIVE UNIT,** you must also install either a fixed or dual flexible disc drive unit. (Single flexible disc drives are only supported as add-on drives.) The letter you place on your single flexible disc drive unit will depend on the other disc drive installed. Refer to Appendix A for more information.
3. Connect the HP-IB cable from the disc drive to the system processor, as shown below:





4. Plug in the power cord by either of the following methods:
- 

### **CAUTION**

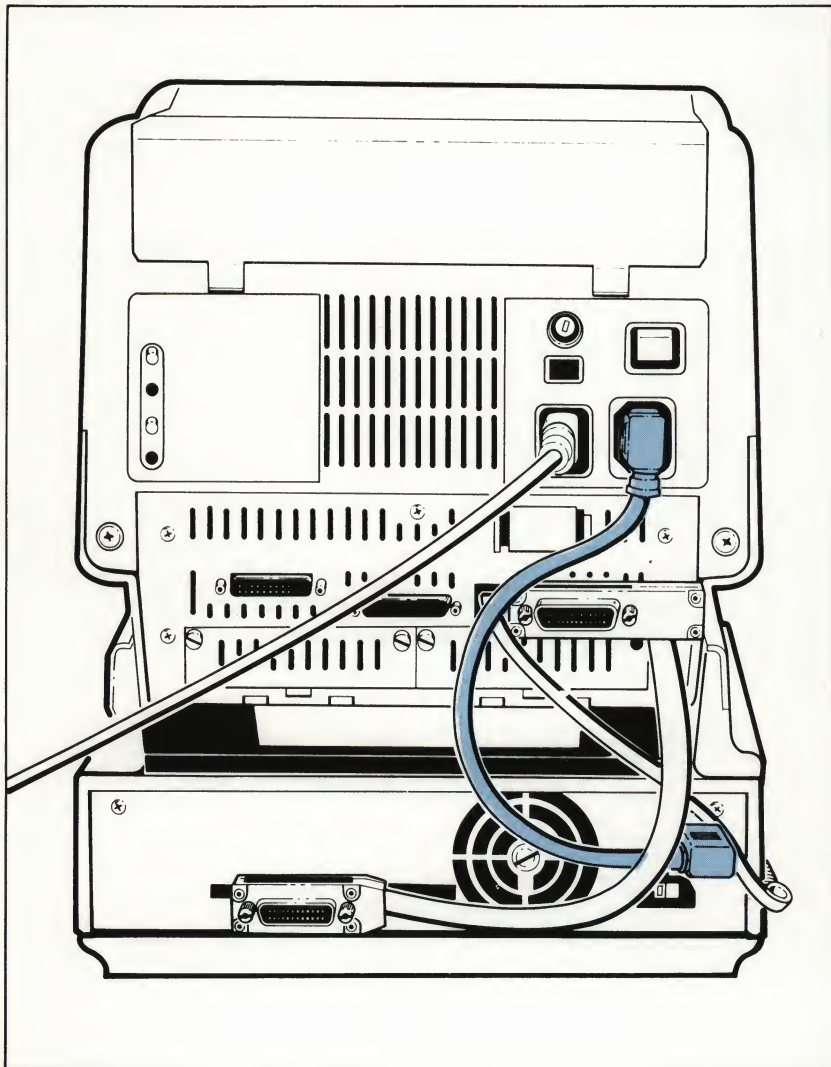
**DO NOT USE EXTENSION CORDS UNDER ANY CIRCUMSTANCES.** Such use may result in data errors and increase the risk of safety hazards. If you wish to use a multiple outlet strip to plug in the components of your system, you must use one which utilizes grounded three-prong outlets and incorporates a circuit breaker.

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- a. Either plug the power cord into the disc drive and then into the wall outlet.
- b. Plug the interconnect power cord provided with your HP 150 into the disc drive and then into the system processor. (Refer to the your disc drive model on the following pages to determine if you may use the interconnect power cord.) You should store the disc drive's power cord for future use.



When you leave the disc drive power switch ON, the system processor's power switch controls the disc drive's power. Turn the system processor ON and OFF to turn your disc drive on and off. You may still turn your drive on and off with its own power switch, if you wish.



## **How Do I Install More Than One Disc Drive?**

You may connect any combination of fixed and flexible disc drives to your HP 150, up to the total number of addresses available in the MS-DOS Device Configuration Menu (described in Appendix A).

In order to install more than one disc drive, you must:

1. Prepare your disc drive for installation according to the instructions for your particular model in this section.
2. Set the address switches on your disc drive and change the address in the MS-DOS Device Configuration Menu. (Refer to Appendix A for details.)
3. Connect the disc drive to your HP 150 by connecting your second HP-IB cable on top of the HP-IB cable on the first disc drive.
4. Connect the power cord from the disc drive(s) to the wall outlet.

---

### **CAUTION**

**DO NOT USE EXTENSION CORDS UNDER ANY CIRCUMSTANCES.** Such use may result in data errors and increase the risk of safety hazards. If you wish to use a multiple outlet strip to plug in the components of your system, you must use one which utilizes grounded three-prong outlets and incorporates a circuit breaker.

---

### **How Do I Check the Connection?**

To check the connection from the disc drive to your system processor, turn on the drive (and the system processor, if you used the interconnect power cord). You should hear a whirring noise (which is the drive and fan starting) and see a light blink on and off once or twice, rather quickly.

If you don't hear the whir or see the light blink (though you may have missed the light), check that:

1. The disc drive power switch is ON.
2. The disc drive is plugged into an AC power outlet.
3. The controlling circuit breaker is ON.

If you still are not getting a response from your disc drive, contact the person from whom you purchased your system.

After the connection is verified, the next steps include:

- installing the remaining components (i.e. , printer, plotter or any accessory boards);
- formatting your disc; and
- installing your Operating System and application software.

These steps are discussed in the following section and chapters.

### **Let's Get Specific**

Installation instructions for Hewlett-Packard disc drives supported by the HP 150 are detailed in the following sections.



## Installing Your HP 9121D or HP 9121S Disc Drive

1. Be sure the disc drive is OFF.
2. Install the fuse and set the voltage switches according to the voltage in your area. (Check with your local electric company to be sure. For installations in the U.S., set the switch to 115 volts.)
3. Set the address switches using a ball-point pen or a small screwdriver as shown in the illustration. Place the letter "A" over the drive on the left side (as you face the front of the disc drive), and the letter "B" over the drive on the right side of the disc drive.
4. Turn the system processor OFF.
5. Connect the HP-IB cable to the system processor and the disc drive.
6. Plug the power cord into the disc drive and then into the wall outlet, OR plug the interconnect power cord into the disc drive and then the system processor (as described in the Disc Drive Installation Checklist).

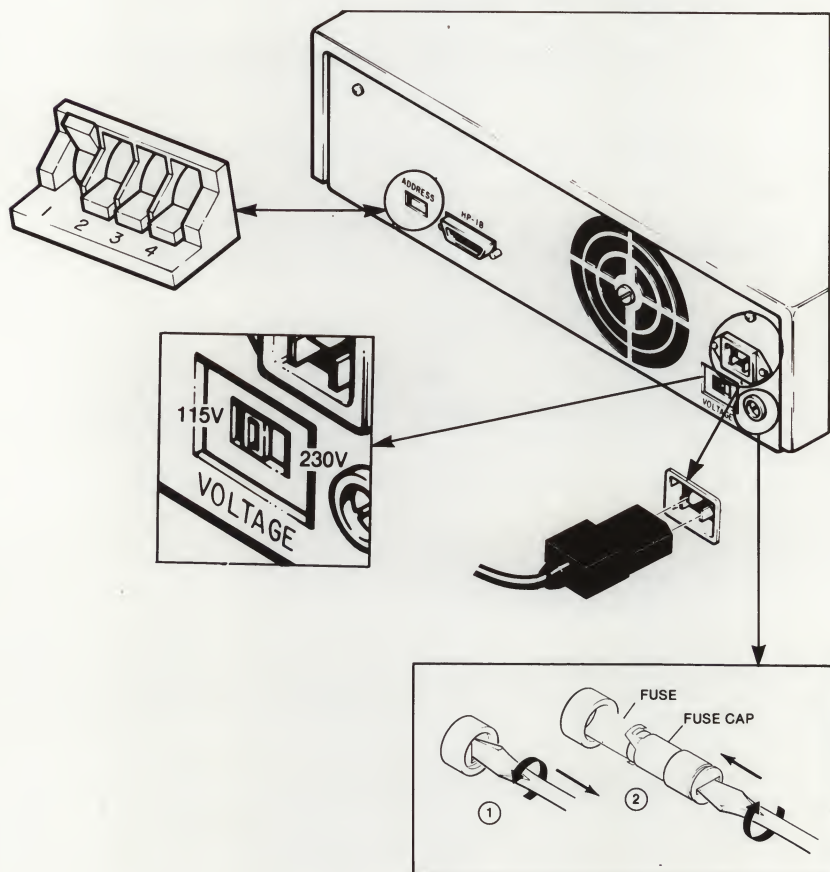
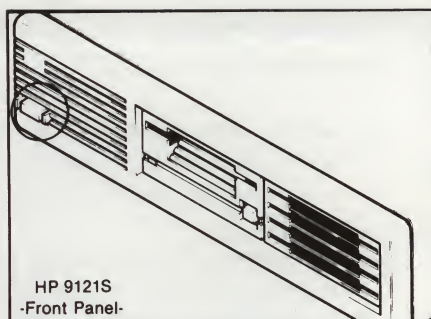
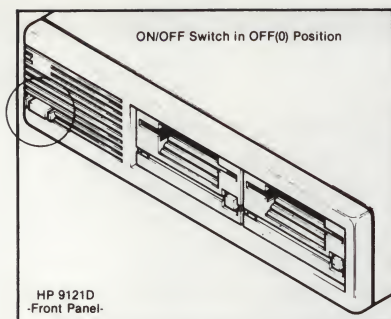
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### NOTE

The HP 9121S Disc Drive is supported only as an add-on drive.

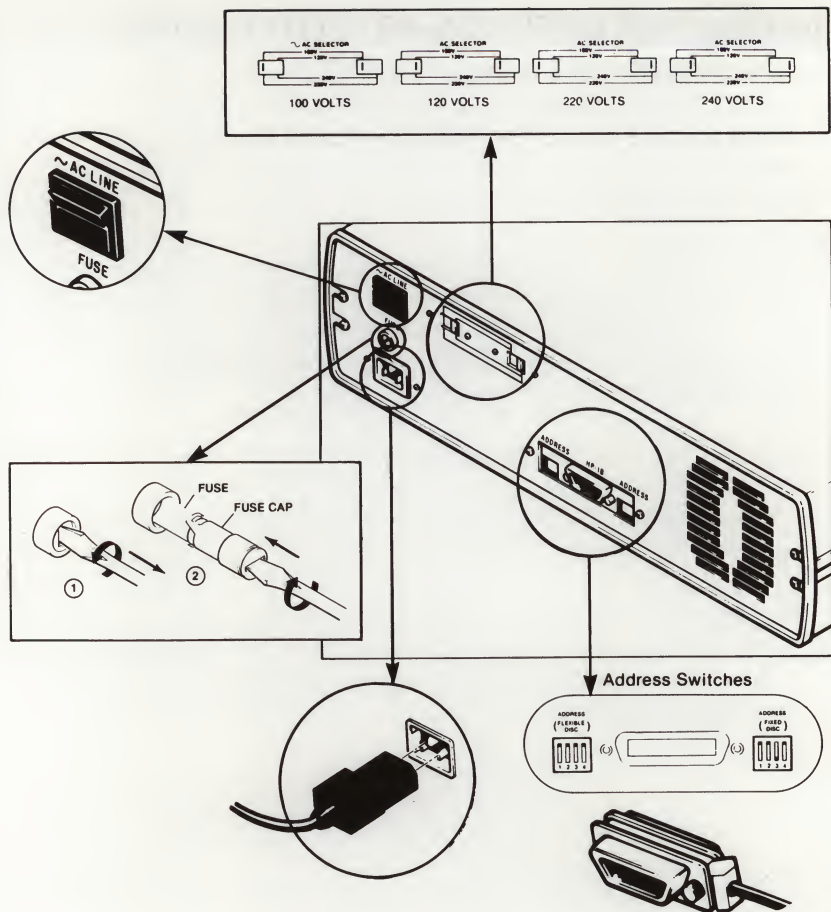
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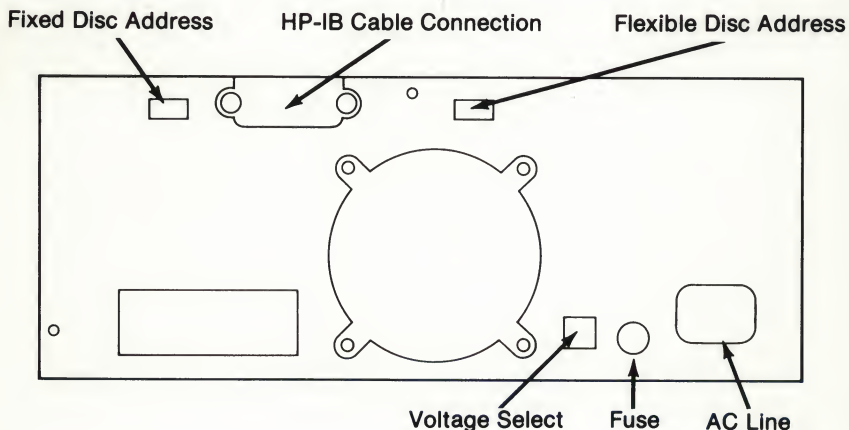
## Installing Your HP 9133A or HP 9133B Disc Drive

1. Be sure the disc drive is OFF.
2. Install the fuse and set the voltage switches according to the voltage in your area. (Check with your local electric company to be sure. For installations in the U.S., set the switch to 115 volts.)
3. Set the address switches using a ball-point pen or a small screwdriver. Place the letter "A" over the fixed disc drive and the letter "C" over the flexible disc drive. (Refer to Appendix A for instructions on changing switch settings and installing the Operating System on a fixed disc.)
4. Turn the system processor OFF.
5. Connect the HP-IB cable to the system processor and the disc drive.
6. Plug the power cord into the disc drive and then into the wall outlet, OR plug the interconnect power cord into the disc drive and then into the system processor (as described in the Disc Drive Installation Checklist).



## Installing Your HP 9133V or HP 9133XV Disc Drive

1. Be sure the disc drive is OFF.
2. Install the fuse and set the voltage switches according to the voltage in your area. (Check with your local electric company to be sure. For installations in the U.S., set the switch to 115 volts.)
3. Set the address switches using a ball-point pen or a small screwdriver. Place the letter "A" over the fixed disc drive and the letter "C" over the flexible disc drive. (Refer to Appendix A for instructions on changing switch settings and installing the Operating System on a fixed disc.)
4. Turn the system processor OFF.
5. Connect the HP-IB cable to the system processor and the disc drive.
6. Plug the power cord into the disc drive and then into the wall outlet.







## Installing Your HP 9134A or HP 9134B Disc Drive

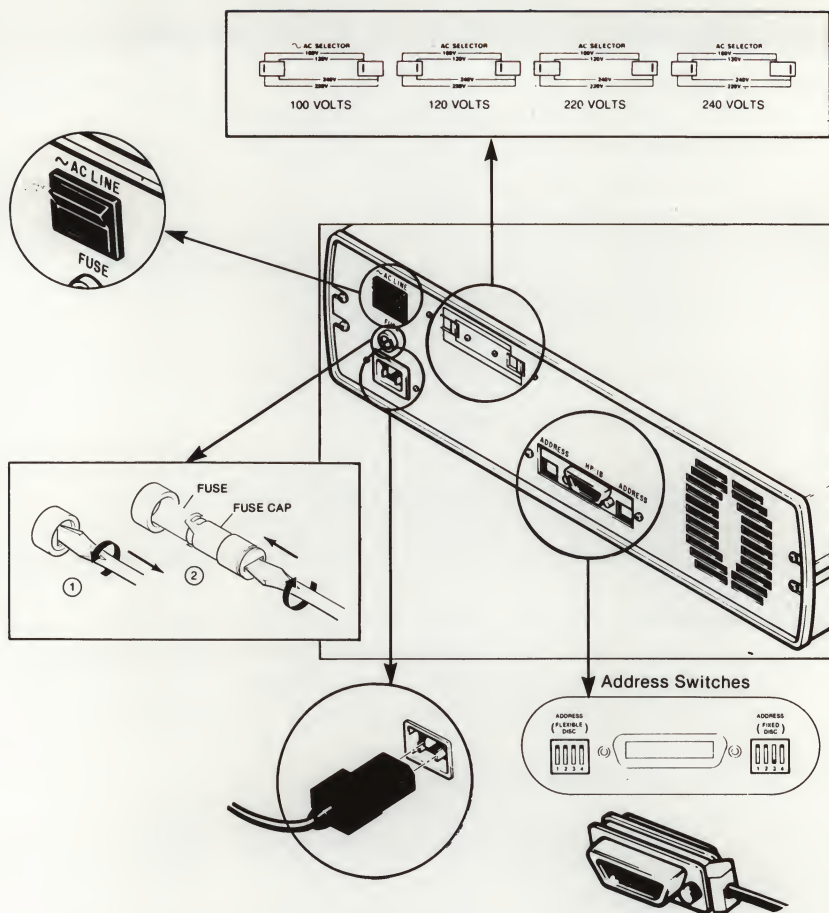
---

### NOTE

These Disc Drives are supported only as an add-on drive. You must first install a flexible disc drive in order to install the Operating System. Refer to Appendix A for details.

---

1. Be sure the disc drive is OFF.
2. Install the fuse and set the voltage switches according to the voltage in your area. (Check with your local electric company to be sure. For installations in the U.S., set the switch to 115 volts.)
3. Set the address switches using a ball-point pen or a small screwdriver. (These address depends on which other disc drive is installed first. Refer to Appendix A for details on changing switch settings and installing the Operating System on a fixed disc.)
4. Turn the system processor OFF.
5. Connect the HP-IB cable to the system processor and the disc drive.
6. Plug the power cord into the disc drive and then into the wall outlet, OR plug the interconnect power cord into the disc drive and then the system processor (as described in the Disc Drive Installation Checklist).

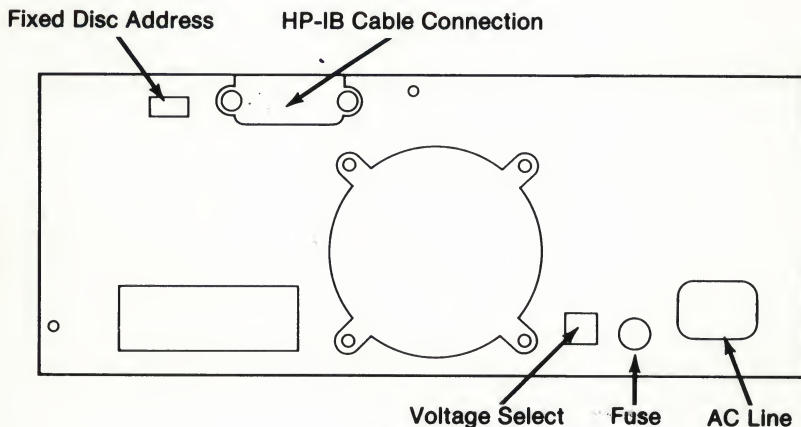


# Installing Your HP 9134XV Disc Drive

## NOTE

These Disc Drives are supported only as an add-on drive. You must first install a flexible disc drive in order to install the Operating System. Refer to Appendix A for details.

1. Be sure the disc drive is OFF.
2. Install the fuse and set the voltage switches according to the voltage in your area. (Check with your local electric company to be sure. For installations in the U.S., set the switch to 115 volts.)
3. Set the address switches using a ball-point pen or a small screwdriver. (The address depends on which other disc drive is installed first. Refer to Appendix A for details on changing switch settings and installing the Operating System on a fixed disc.)
4. Turn the system processor OFF.
5. Connect the HP-IB cable to the system processor and the disc drive.
6. Plug the power cord into the disc drive and then into the wall outlet, OR plug the interconnect power cord into the disc drive and then the system processor (as described in the Disc Drive Installation Checklist).

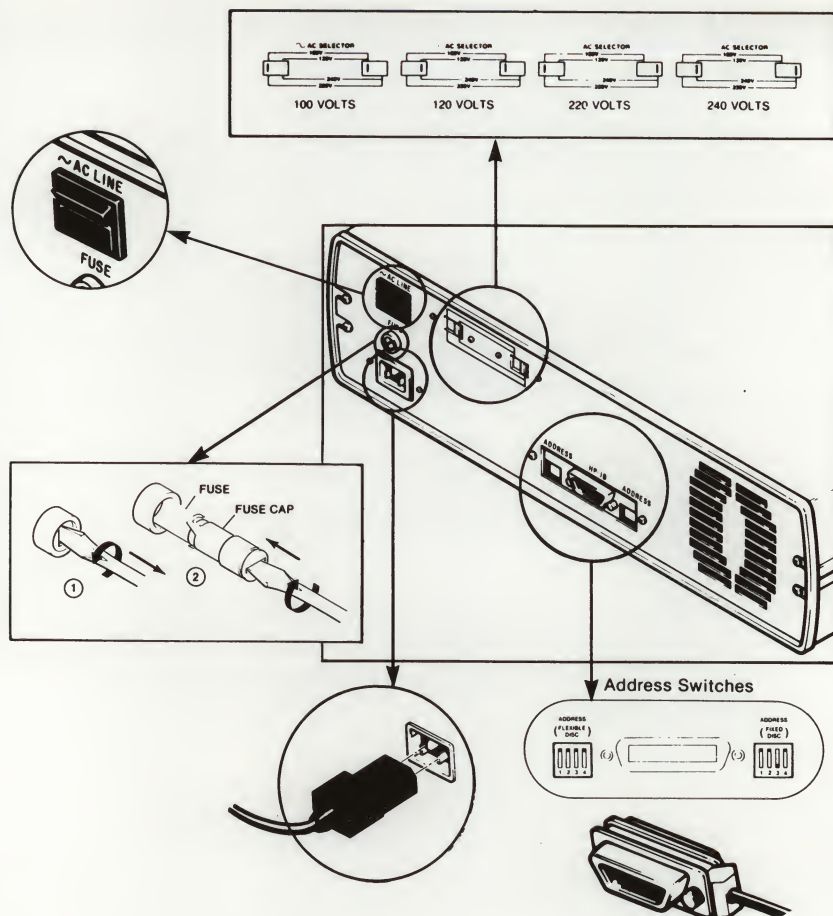




## Installing Your HP 9135A Disc Drive

1. Be sure the disc drive is OFF.
2. Install the fuse and set the voltage switches according to the voltage in your area. (Check with your local electric company to be sure. For installations in the U.S., set the switch to 115 volts.)
3. Set the address switches using a ball-point pen or a small screwdriver. Place the letter "A" over the fixed disc drive and the letter "C" over the flexible disc drive. (Refer to Appendix A for instructions on changing switch settings and installing the Operating System on a fixed disc.)
4. Turn the system processor OFF.
5. Connect the HP-IB cable to the system processor and the disc drive.
6. Plug the power cord into the disc drive and then into the wall outlet, OR plug the interconnect power cord into the disc drive and then the system processor (as described in the Disc Drive Installation Checklist).





## Installing Your HP 82901M or HP 82902M Disc Drive

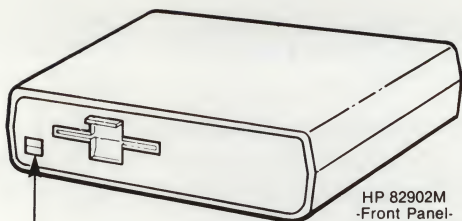
1. Be sure the disc drive is OFF.
2. Install the fuse and set the voltage switches according to the voltage in your area. (Check with your local electric company to be sure. For installations in the U.S., set the switch to 115 volts.)
3. Set the address switches using a ball-point pen or a small screwdriver as shown in the illustration. Place the letter "A" over the drive on the left side (as you face the front of the disc drive), and the letter "B" over the drive on the right side of the disc drive.
4. Turn the system processor OFF.
5. Connect the HP-IB cable to the system processor and the disc drive.
6. Plug the power cord into the disc drive and then into the wall outlet, OR plug the interconnect power cord into the disc drive and then the system processor (as described in the Disc Drive Installation Checklist).

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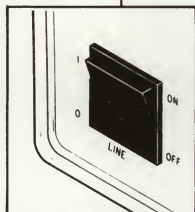
### NOTE

The HP 82902M Disc Drive is supported only as an add-on disc drive.

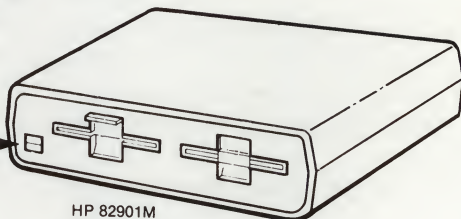
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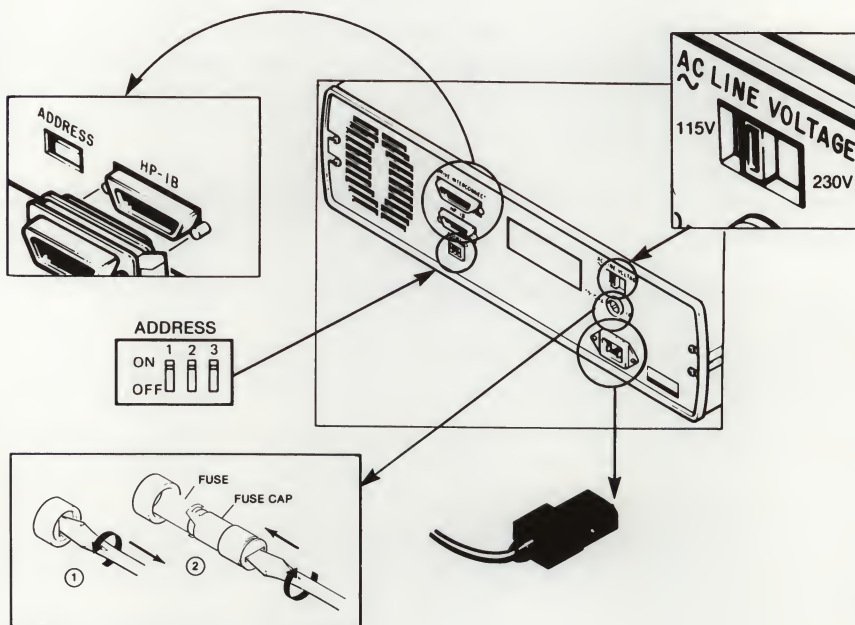
HP 82902M  
-Front Panel-



ON/OFF Switch in  
OFF Position



HP 82901M  
-Front Panel-



# How Do I Install A Printer?

In this section, you will connect your printer(s) to the HP 150 system processor.

## NOTE

Each printer comes with its own manual. Be sure to keep the printer reference manual, since you may have questions that are not answered in this manual.

The following Hewlett-Packard printers may be installed on your HP 150. (You select the cable type when you purchase the printer.)

	Printer	Cable Type Available	
		HP-IB	RS-232
HP 2674A	Integral Thermal Printer	(internal cable only)	
HP 2601A	Daisywheel Serial Printer	-	*
HP 2602A	Daisywheel Serial Printer	*	*
HP 293X	Dot Matrix Serial Printer	*	*
HP 82905B	Dot Matrix Serial Printer	*	*
HP 82906A	Dot Matrix Serial Printer	*	-

## Printer Installation Checklist

Although installation procedures vary for each printer, the following steps are generally required. Refer to the model number of your printer in the following pages (listed in the order shown above) for specific installation instructions.

1. Be sure the power switch is OFF for the printer and the system processor.
2. Install the ribbon cartridge and paper. If required, install the print wheel.
3. Set the switches as required for your particular printer. (If you wish to first run self-test for the printer, you need to go through these steps but use different switch settings. Refer to instructions for your particular printer model.)



4. You need to tell your personal computer how to transmit data to your printer. Refer to Appendix A for instructions on setting the MS-DOS Device Configuration Menu.
5. Connect either the HP-IB or RS-232 cable to the printer and then to the system processor.
6. Plug the power cord into the printer and then the wall outlet, and turn the power switches for your printer and the system processor ON.

---

### **CAUTION**

**DO NOT USE EXTENSION CORDS UNDER ANY CIRCUMSTANCES.** Such use may result in data errors and increase the risk of safety hazards. If you wish to use a multiple outlet strip to plug in the components of your system, you must use one which utilizes grounded three-prong outlets and incorporates a circuit breaker.

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### **How Do I Install a Second Printer?**

You may have only one HP-IB printer connected to your system at a time. However, if you need two printers, you may connect one printer using an RS-232 cable and one printer using an HP-IB cable (which you select at the time your purchase the printer).

When you install another printer, you'll need to follow instructions for setting up your printer according to the particular model listed in the following pages. In addition, you must tell your personal computer how to transmit data to your printer. Refer to Appendix A to set the MS-DOS Device Configuration Menu.

### **Let's Get Specific**

Installation instructions for Hewlett-Packard printers supported by the HP 150 are detailed in the following sections. The model number of each printer is listed on the edge of the page for quick reference.

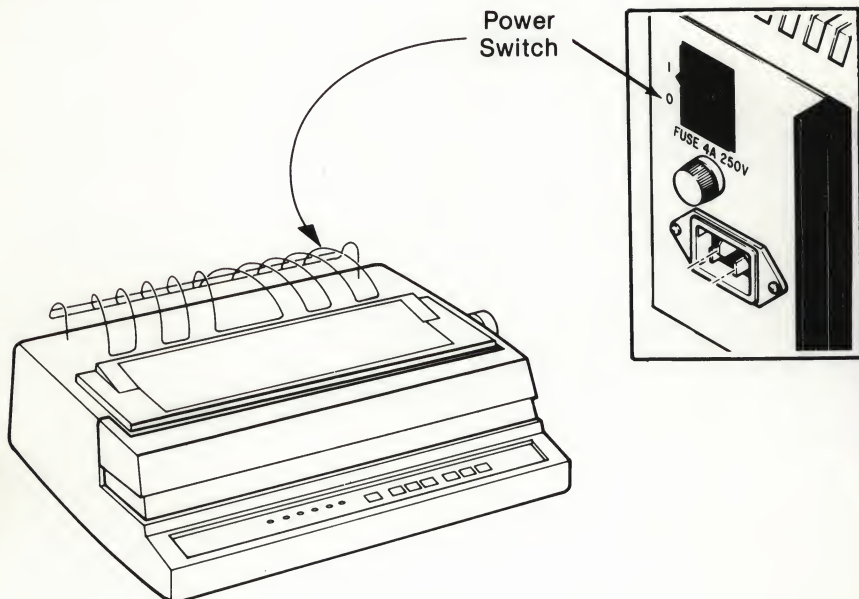
After you connect your printer(s), you may begin using your HP 150 personal computer. However, if you wish to use a plotter, go to the next section for installation instructions.



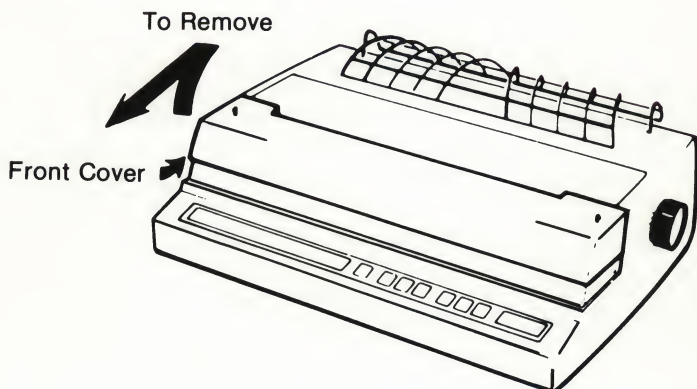
# Installation Procedures

## Installing Your HP 2601A Printer

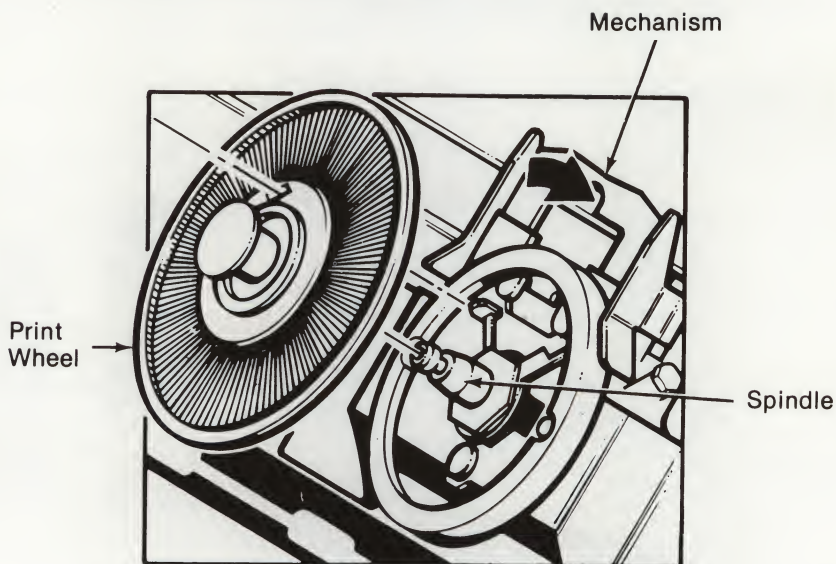
1. Be sure the printer power switch is OFF.



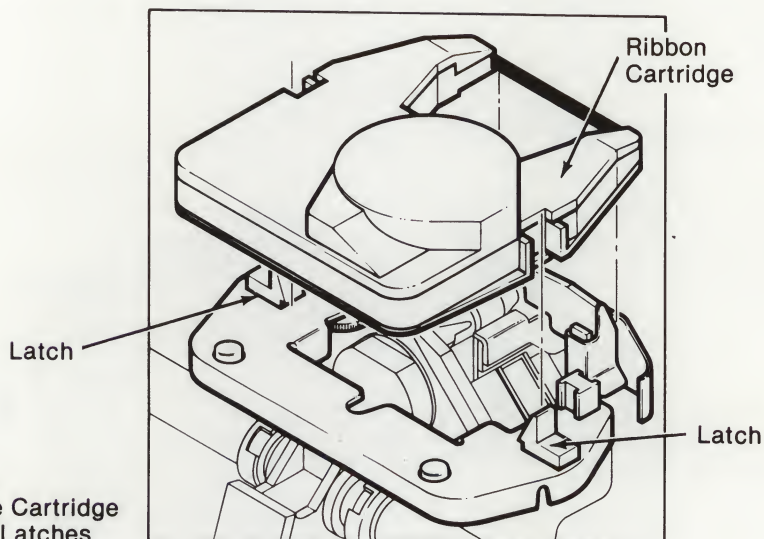
2. Remove the front cover.



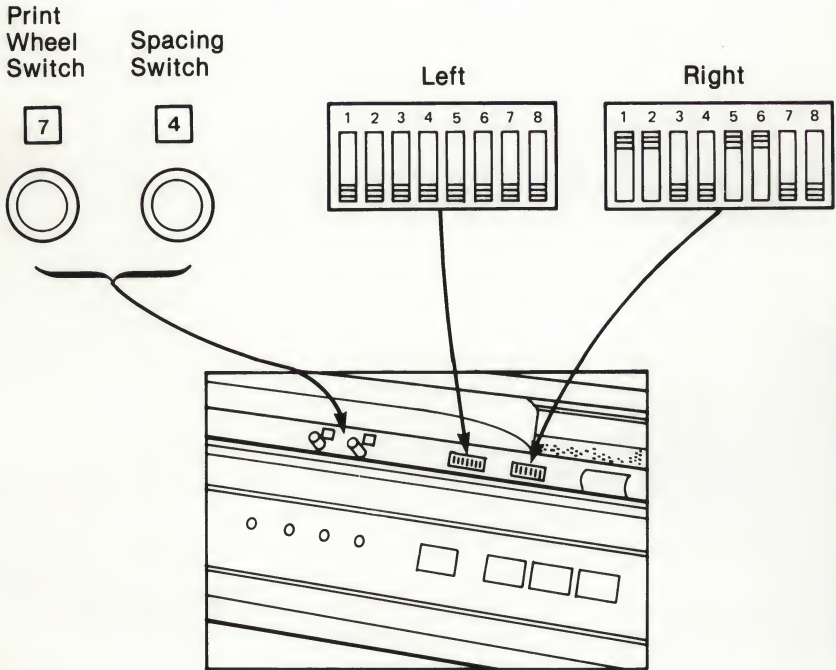
3. Install the print wheel.
  - a. Rock Mechanism Back...
  - b. Press Print Wheel Onto Spindle.



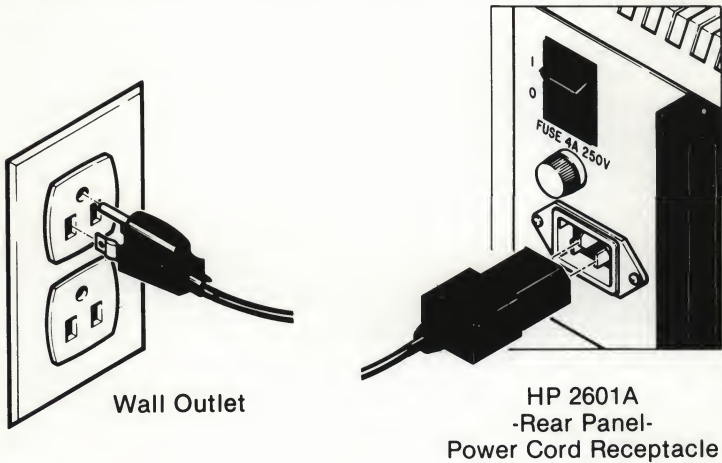
4. Install the ribbon cartridge



5. Set the switches for self-test and replace the front cover.



6. Plug the power cord into the printer and then the wall outlet.



7. Install the paper as you would in a typewriter.
8. Turn the printer ON.

[illegible]

## HP 2601A Test Pattern

## NOTE

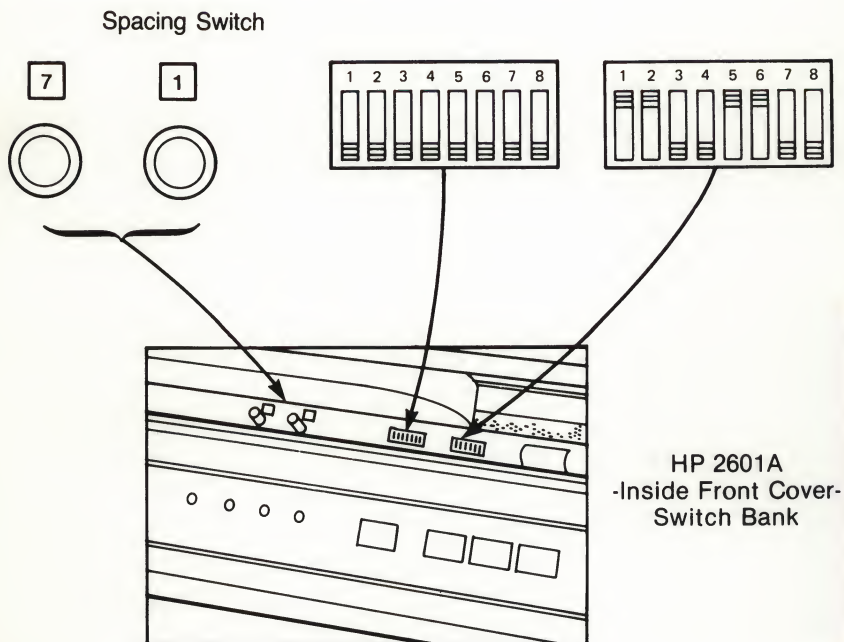
If nothing happens check the following:

- the printer is ON.
- the printer is plugged in.
- the wall outlet's circuit breaker is ON.

If all of the above are OK and your printer still fails to function, contact the person from whom you purchased your system.

9. After a few lines of test pattern have printed, turn the printer OFF.

10. Remove the front cover and set the spacing switch to 1.



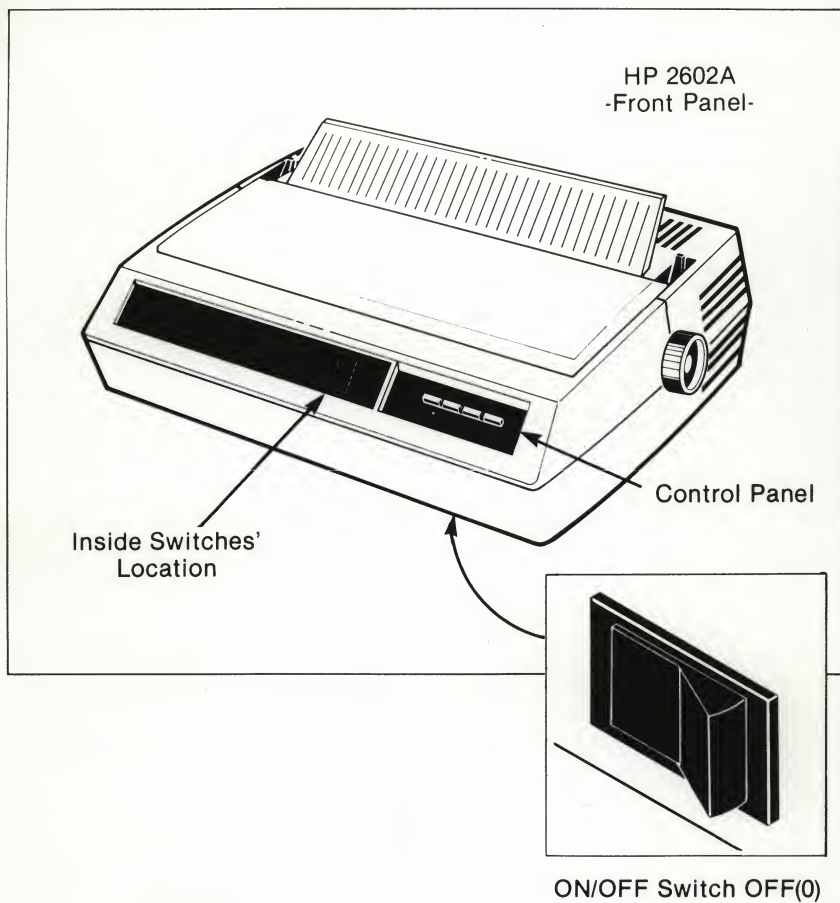
11. Replace the front cover.
12. Connect the RS-232 cable to the system processor and then the printer.



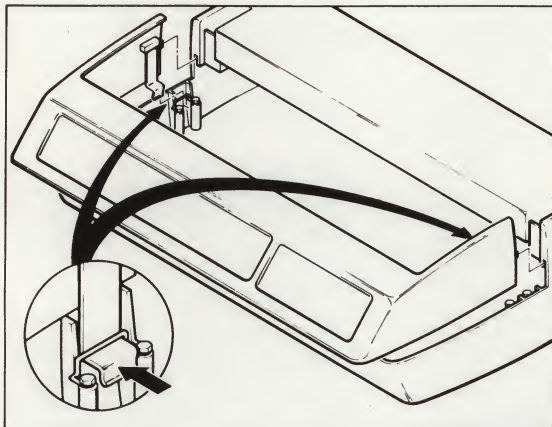


## Installing Your HP 2602A Printer

1. Be sure the printer power switch is OFF.

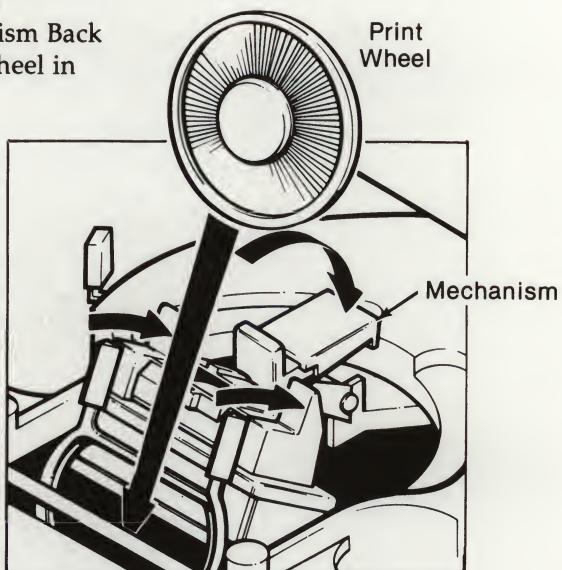


2. Remove the front cover.

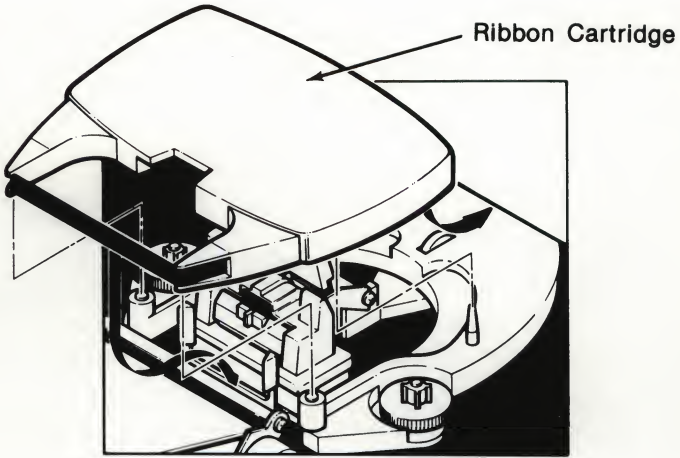


3. Install the print wheel.

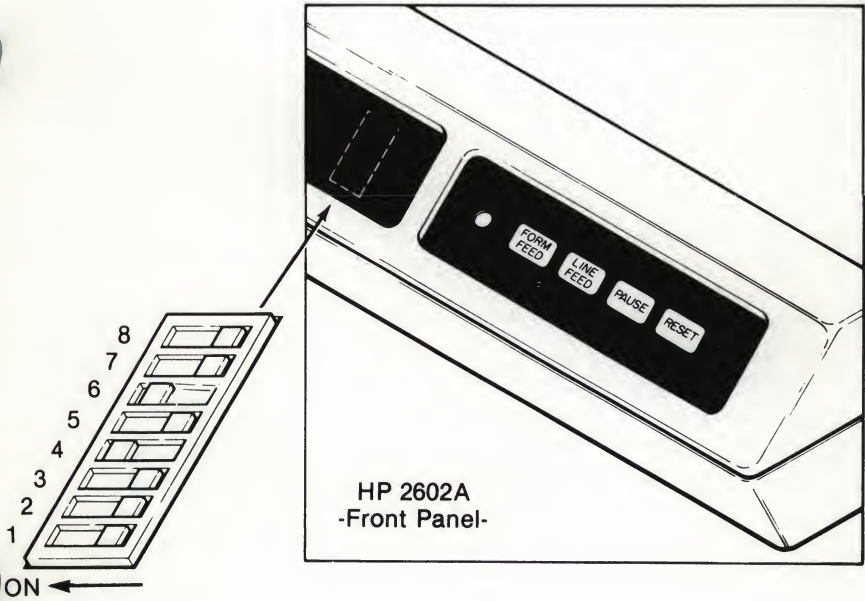
- a. Rock Mechanism Back
- b. Slide Print Wheel in



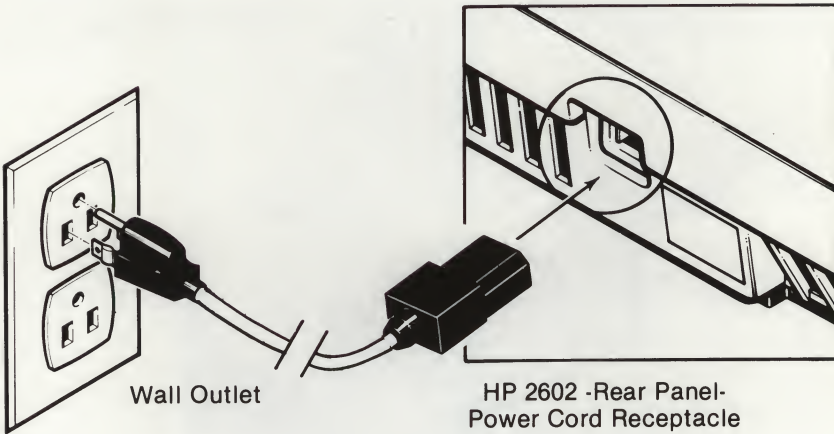
4. Install the ribbon cartridge.



5. Set the switches for self-test and replace the front cover.



6. Plug the power cord into the printer and then the wall outlet.



7. Install the paper as you would in a typewriter.
8. Turn the printer ON.

[illegible]

## NOTE

If nothing happens check the following:

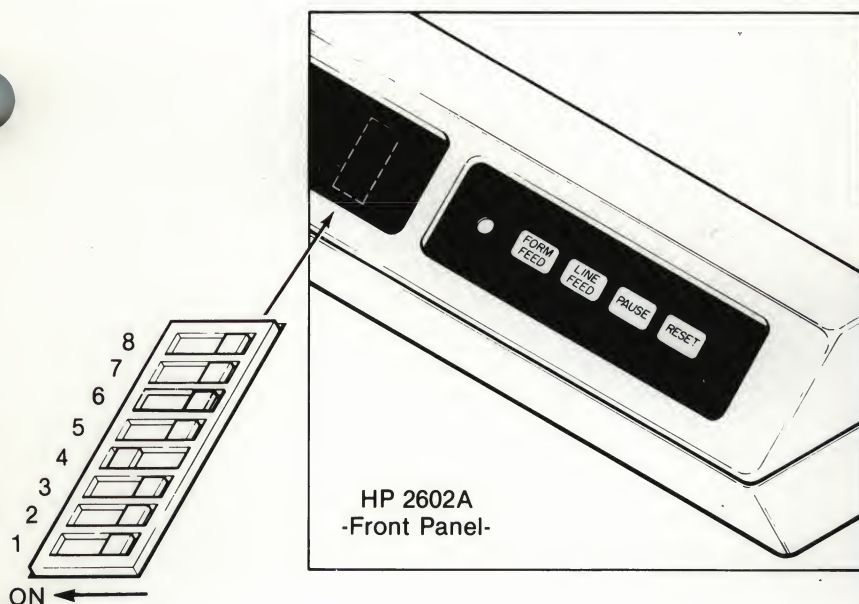
- the printer is ON.
- the printer is plugged in.
- the wall outlet's circuit breaker is ON.

If all of the above are OK and your printer still fails to function, contact the person from whom you purchased your system.

9. After a few lines of the test pattern have printed, turn the printer OFF.



10. Remove the front cover and set the switches for regular operation.

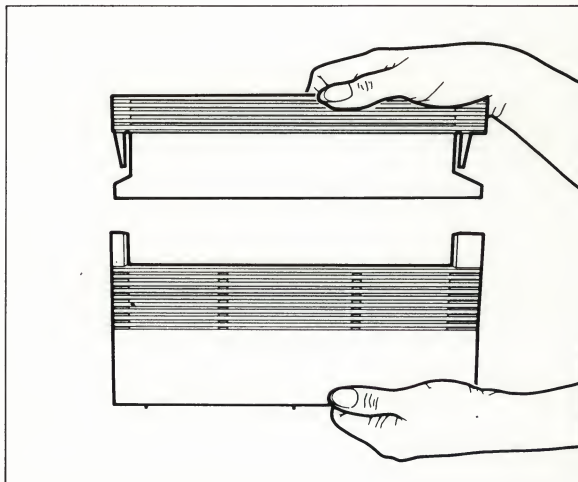
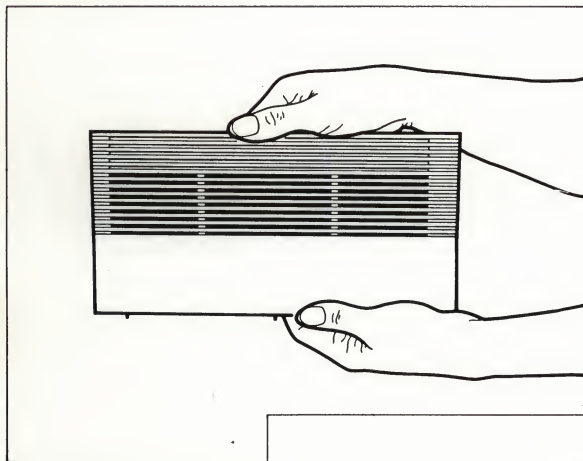


11. Replace the front cover.
12. Connect either the HP-IB or the RS-232 cable to the printer and then to your system processor.

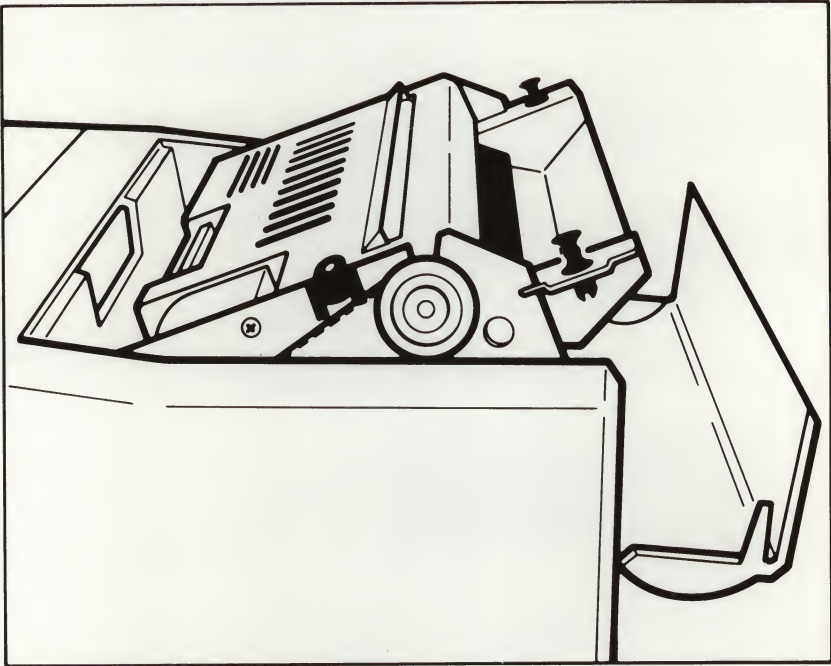


## Installing Your HP 2674A Internal Printer

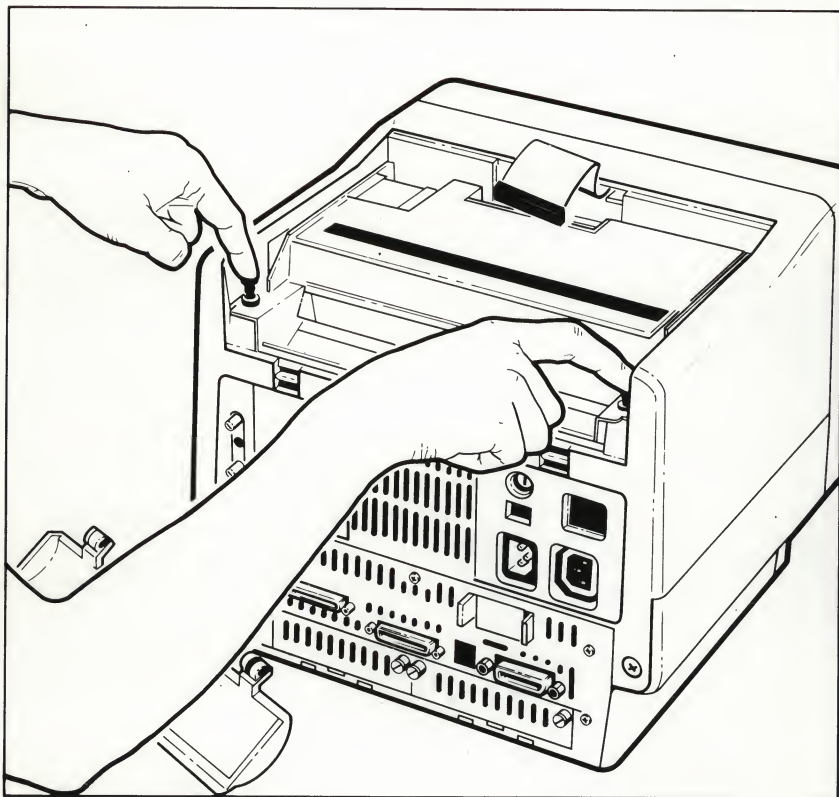
1. Be sure the power switch on your HP 150 is OFF, and unplug the power cord.
2. Open the paper access door by tilting the door backwards.
3. Remove the printer cover by grasping the last vent toward the rear of the top of the computer and lifting it off.
4. Remove the filler plate. (You may wish to store this part if you plan to take the printer out at a later date.)



5. Tilt the front of the printer downward, then slide it forward into the printer compartment.

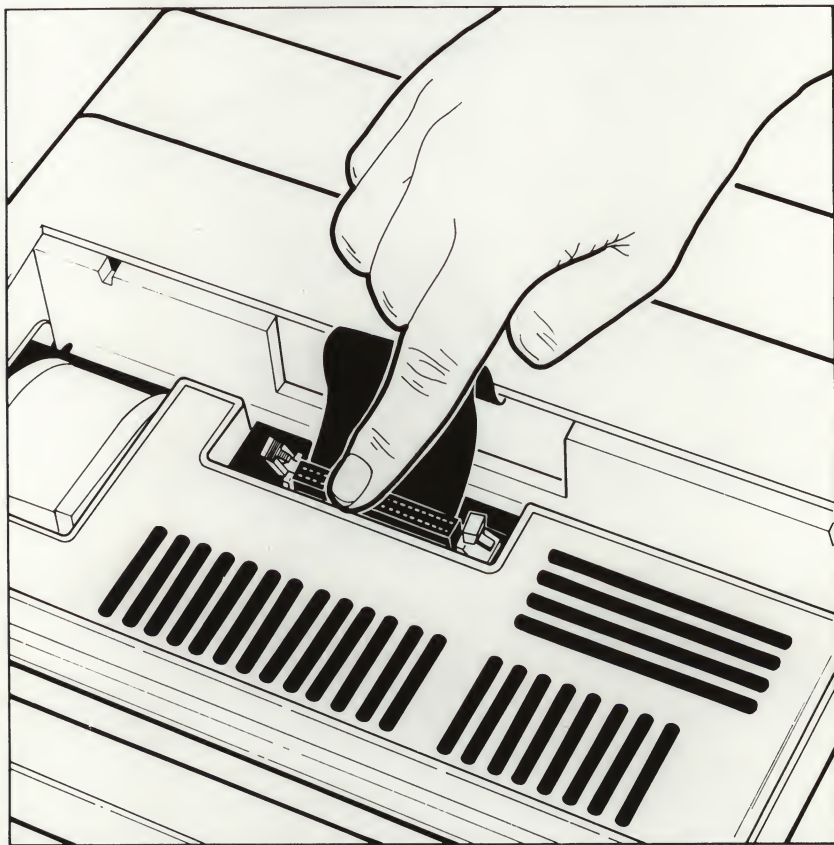


6. Push the black fasteners (located on each side of the paper tray) down firmly so that they click into place.





7. Connect the computer cable to the printer as follows:
- Make sure that the ejector ears on each side of the pin connector in the printer are pointing out.
  - Place the cable directly over the pin connector in the printer. With one or two fingers, press the connector firmly in place by pushing down firmly in the center. (The connector ears snap up unaided as the cable is connected.)



(If you want to remove the printer, simply press down on both connector ears to release the cable.)

8. Plug your HP 150 power cord into the wall outlet and turn the power switch ON. Check to see that the LED next to the the green self-test button is lit. (This light indicates that the cable is connected properly and that power is being supplied to the printer.)

At power on, the printer performs two line feeds, then sweeps the print head across the page and back.

If the LED is not lit, check to be sure the connector is securely attached. If after checking the connection the LED is still not lit, call the person from whom you purchased your system.

9. Replace the printer cover (without the vent), and leave the paper access door open in order to load paper.

### **How Do I Load Paper?**

The thermal paper required for your HP 2674A is available from HP's Computer Supplies Operation (CSO) as follows:

Part Number 92160A – blue ink

Part Number 92160B – black ink

Part Number 92160C – black ink with page perforations

---

### **NOTE**

Before loading paper, be sure that the power switch for your HP 150 is turned ON.

- 
1. Carefully separate the cut edge of the paper from the paper roll at the glue spot or tape which anchors the end of the paper to the roll.

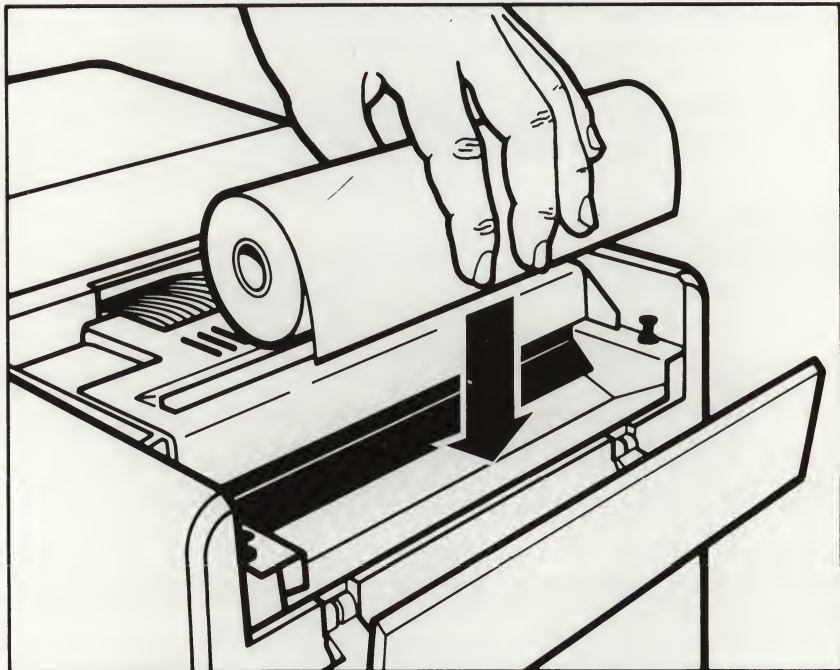
---

### **CAUTION**

Be sure that the glue spot does not touch the print head during operation. (Advance the paper if necessary.)

---

2. First make sure that the paper is rolled tightly, then simply rest the paper roll in the paper tray. (The cut edge of the paper must be straight and should rest on the underside of the roll, against the rear surface of the tray.)
3. With your finger and thumb, gently push the paper forward (in a clockwise motion). The paper is *immediately* pulled through the paper path as soon as the printer detects it.



Close the paper access door, making sure that as the paper advances it will not be trapped inside the unit.

### How Do I Test the Printer?

To verify that your printer is ready to use, run the system self-test for your internal printer using the following steps:

1. Press **User System** twice to display the following function keys:

device	margins/	service	modes
control	tabs/col	keys	

enhance	define	set	config
video	fields	time	keys

2. Press **service keys** to display the following:

POWER ON TEST	MEMORY TEST	TOUCHSEN ALIGNMNT	
------------------	----------------	----------------------	--

SYSTEM TEST	IDENTIFY ROMS	DATACOMM TEST	INT PRT TEST
----------------	------------------	------------------	-----------------

### NOTE

**INT PRT TEST** only appears on the screen after you install the printer.

3. Press **INT PRT TEST** to print the following self-test example:

```
0123456789:;<=>?@ABCDEFGHIJKLMNPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~
FROM CODE DATE: MM/DD/YY (where MM=Month, DD=Day, and YY=Year)
```

If the system self-test fails, one of the following occurs:

1. Nothing happens, or
2. The test pattern that prints is different from the example shown above, or
3. The following message appears on the screen:

```
INTERNAL PRINTER ERROR
PRESS RETURN TO CLEAR
```

### NOTE

The above message may also appear on the screen when the internal printer is out of paper. Before proceeding, check your paper supply.

If any of the above occurs, you must then perform a local self-test for the printer, as outlined below:

1. Remove the cover over the printer and press the green self-test button located next to the cable connector.

The following test pattern should print:

```
0123456789:;<=>?@ABCDEFGHIJKLMNPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~
FROM CODE DATE: MM/DD/YY (where MM=Month, DD=Day, and YY=Year)
```



## 2. Replace the printer cover.

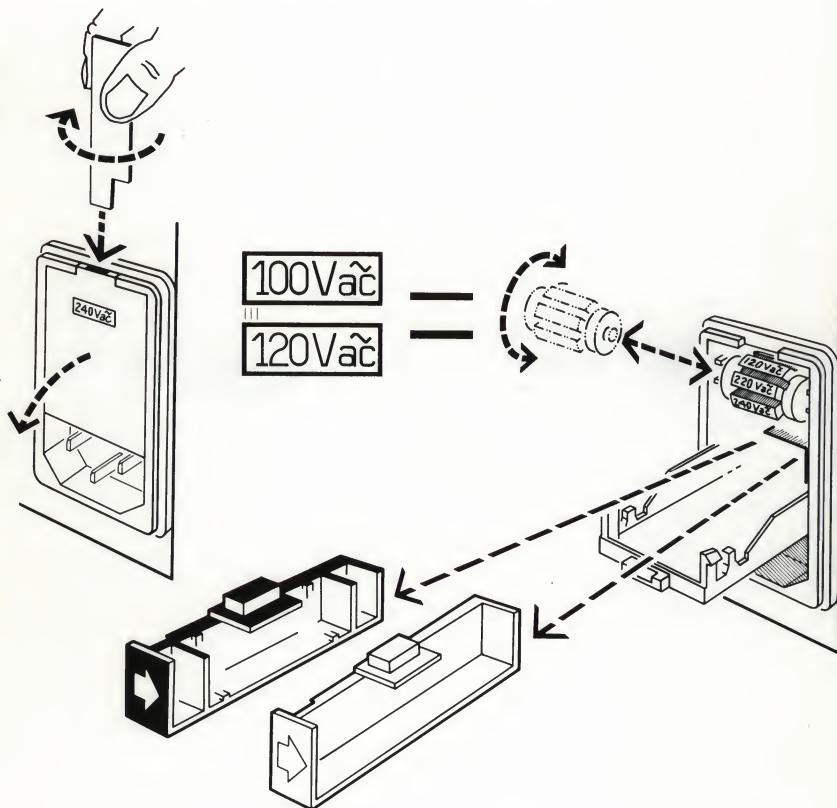
If the printer fails the system self-test yet prints the local self-test example shown above, you must return the printer and the computer for repair or replacement (by shipping separately).

For information on using advanced functions, refer to Appendix A under the heading, "Advanced Control of the HP 2674A Internal Printer".

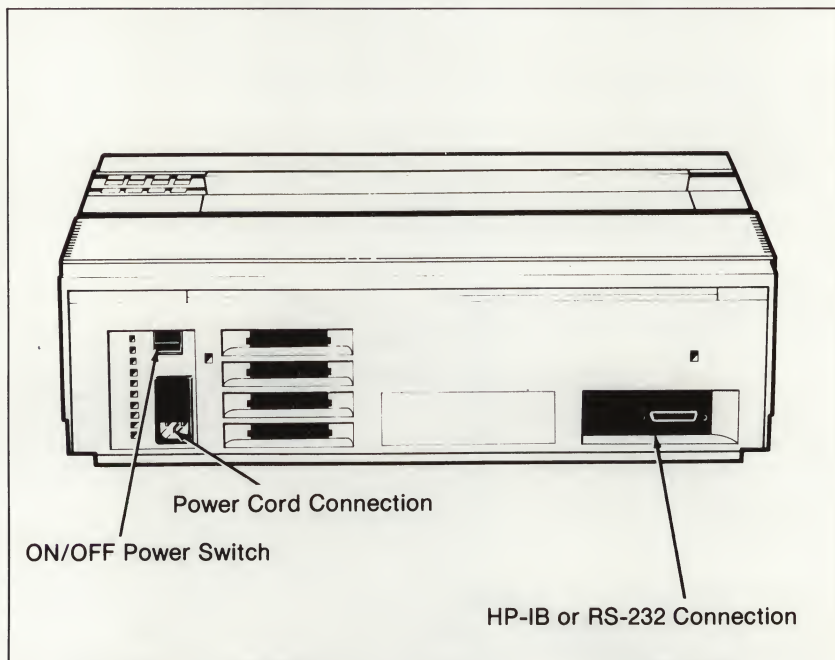


## Installing Your HP 293X Printer

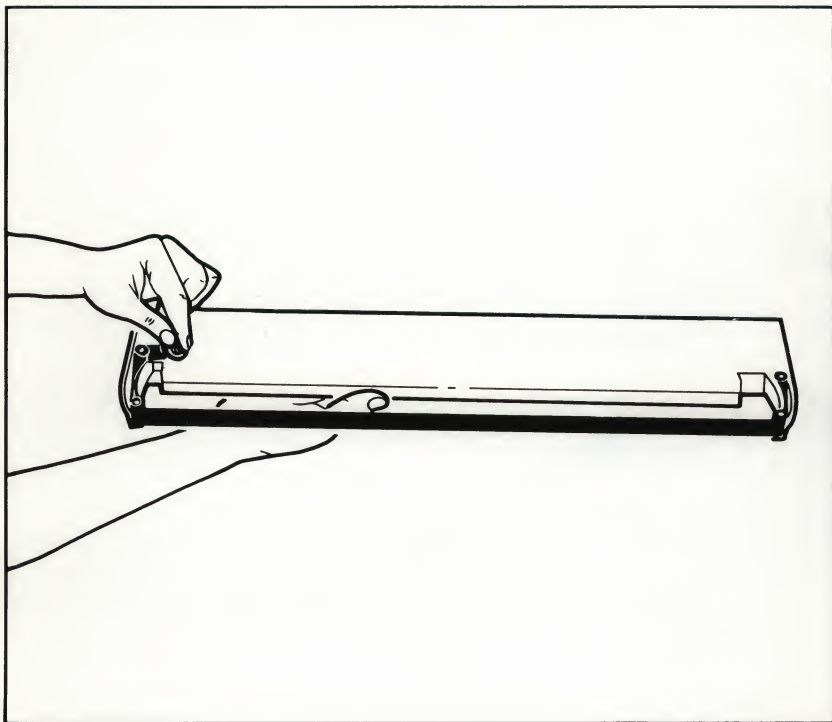
1. Install the fuse and set the voltage setting as shown below. (Refer to your printer manual for more information.)



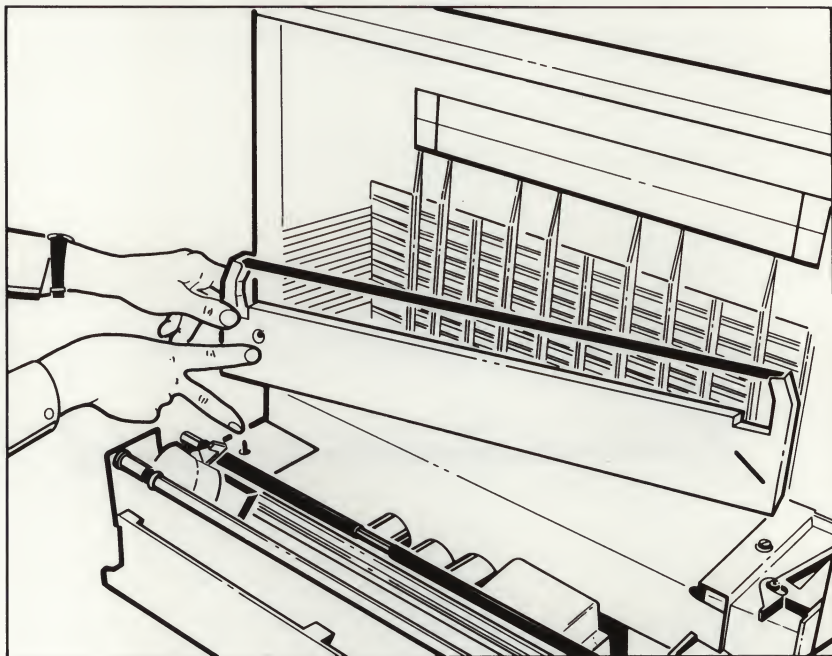
2. Plug the power cord into the printer and then into the wall outlet.  
Be sure that the power switch on the rear panel is OFF.



3. Lift the printer cover and install the print ribbon as follows:
  - a. Before loading the ribbon cartridge, tighten any slack in the ribbon by turning the knob on the end.



- b. Place the ribbon cartridge onto the guideposts in the printer, turning the knob on the ribbon cartridge until it drops into place.



- c. Close the printer cover and turn the power switch on the rear panel ON; the ribbon cartridge automatically threads itself.

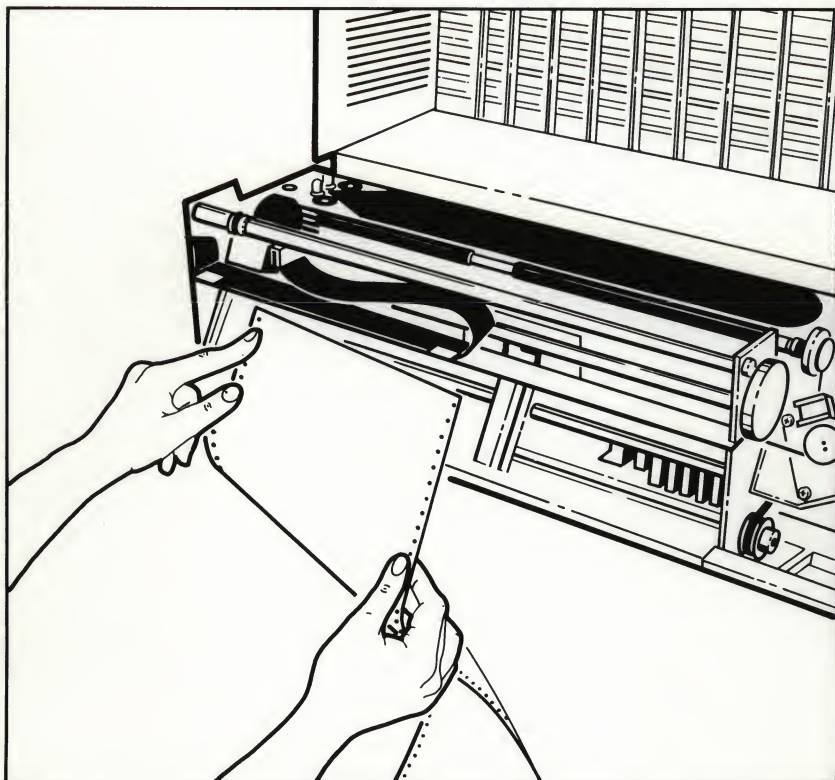
---


#### NOTE

Any time you turn the power switch ON, the print head sweeps across the width of the printer; you will then hear a beep as the indicator lights on the printer keypad are illuminated.

---

4. Turn the printer power switch OFF and load paper according to the illustration below.



Use **PAGE**  on the front panel of the printer to advance the paper.



5. To run the printer's self-test, press TEST on the front panel of the printer, and the following message is printed:

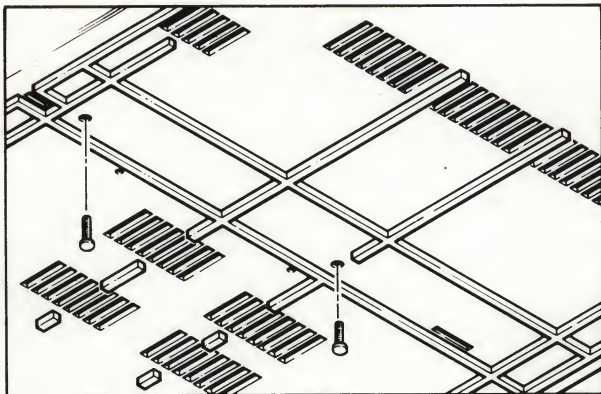
**S e l f   T e s t   P a s s e d**

6. Turn the printer OFF.
7. Connect the HP-IB or RS-232 cable to the rear panel of the printer, then to the connector on the rear panel of the system processor.
8. Turn the system processor and the printer ON.

Your HP 293X printer is now ready to use.

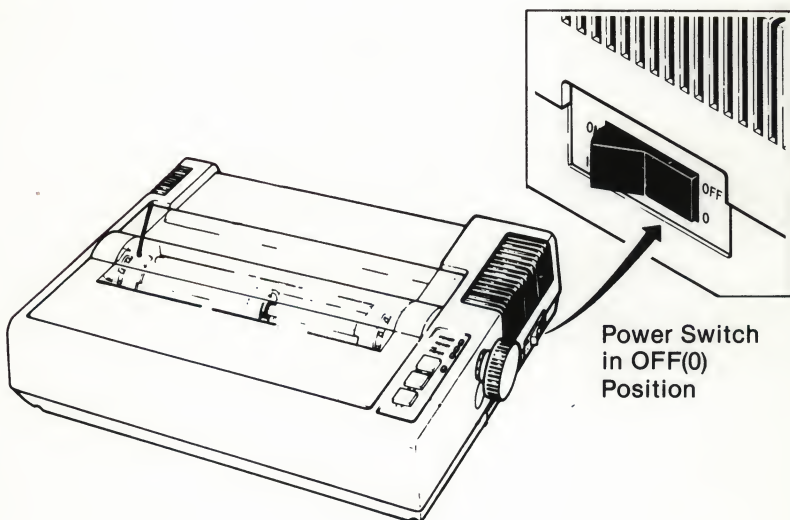
## Installing Your HP 82905B Printer

1. Remove the shipping screws and remove the tape covering the top panel control buttons.

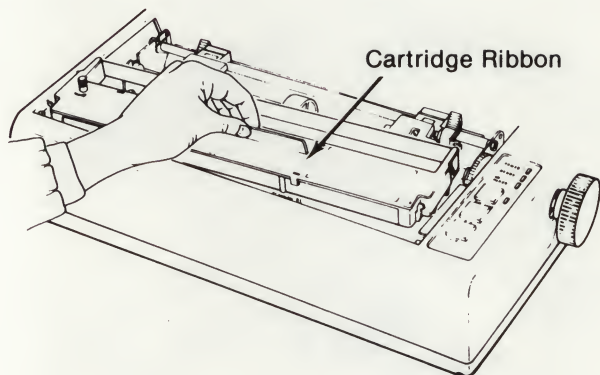


HP 82905  
-Bottom Panel-

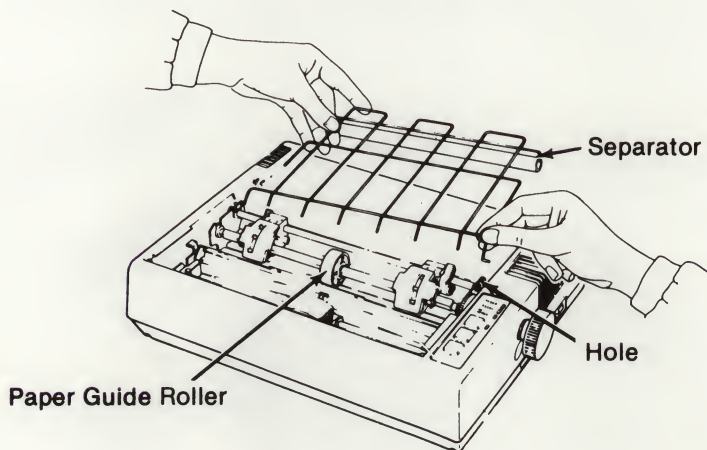
2. Be sure the printer power switch on the right side of the printer is OFF.



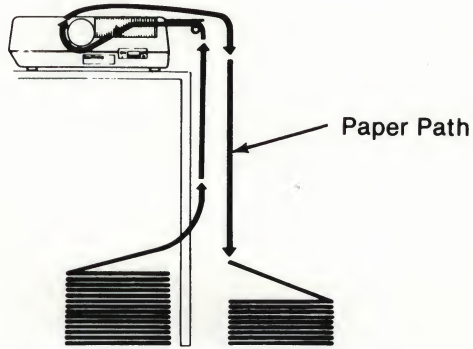
3. Remove the front cover.
4. Install the ribbon cartridge.



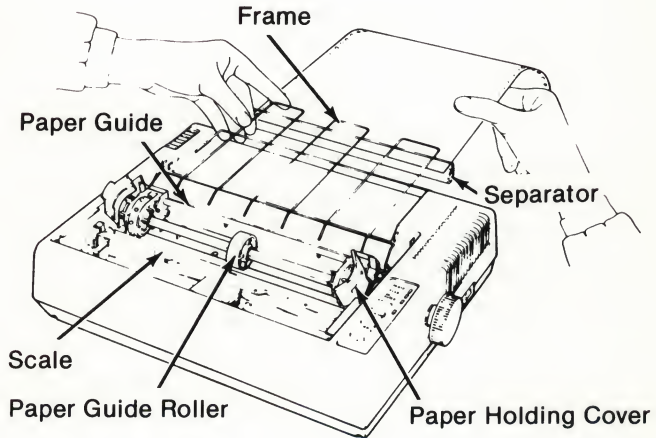
5. Install the separator. (For details, refer to the printer's reference manual.)



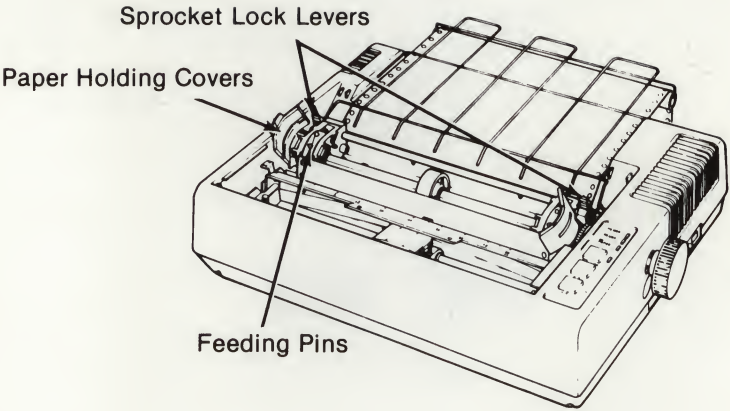
6. Install either cut sheet or fanfold paper.



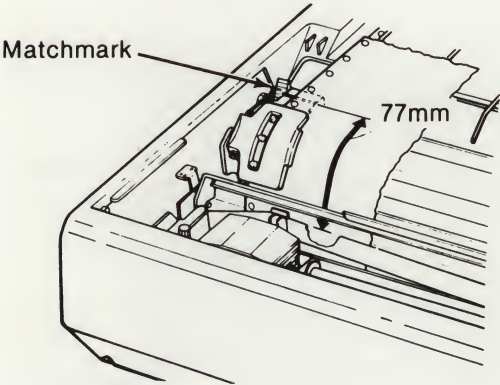
a.



b.

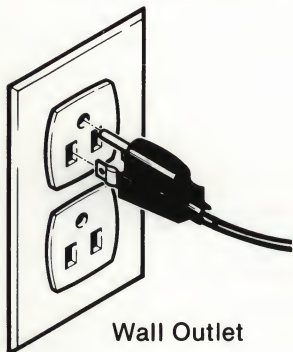


c.

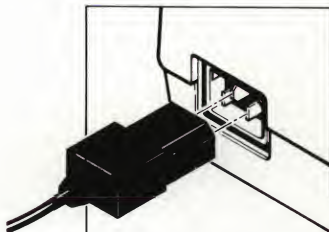




7. Replace the front cover and plug the power cord into the printer, then into the wall outlet.

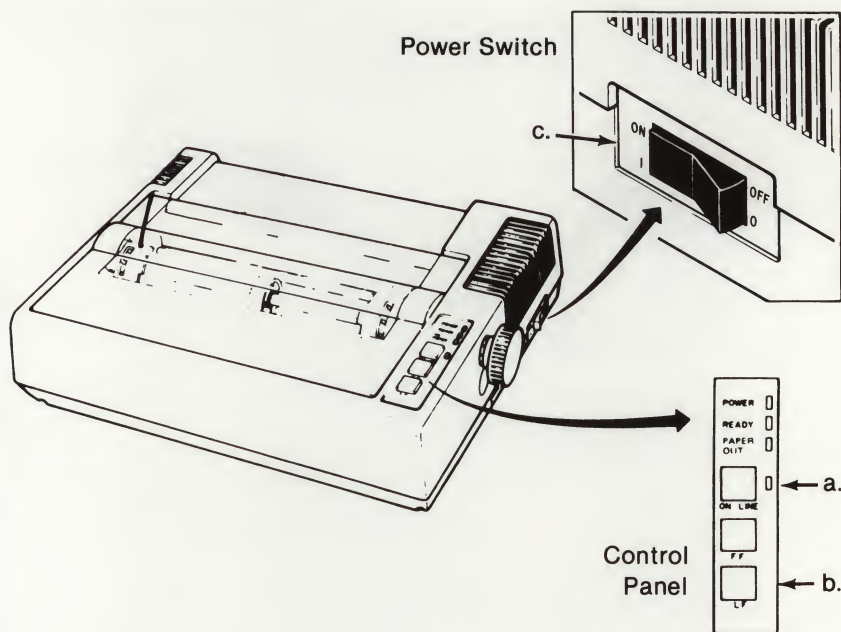


Wall Outlet



HP 82905  
-Rear Panel-

8. Run the printer's self-test.



- a. Press the ON LINE button so the light is OFF.
- b. Press the LF button while you turn the power switch ON.
- c. After a few lines of the test pattern have printed, turn the printer OFF.

## HP 82905 Self-Test Pattern

789:;<=>?@ABCDEFGHIJKLMN	OPQRSTUVWXYZ[\]^_`	abcdefghijklmnopqrstuvwxyz
89:;<=>?@ABCDEFGHIJKLMN	OPQRSTUVWXYZ[\]^_`	abcdefghijklmnopqrstuvwxyz
9:;<=>?@ABCDEFGHIJKLMN	OPQRSTUVWXYZ[\]^_`	abcdefghijklmnopqrstuvwxyz
:;<=>?@ABCDEFGHIJKLMN	OPQRSTUVWXYZ[\]^_`	abcdefghijklmnopqrstuvwxyz
;<=>?@ABCDEFGHIJKLMN	OPQRSTUVWXYZ[\]^_`	abcdefghijklmnopqrstuvwxyz

9. Connect the cable to the system processor and then the printer.



## Installing Your HP 82906A Printer

1. Remove the shipping screws and remove the tape covering the top panel control buttons.

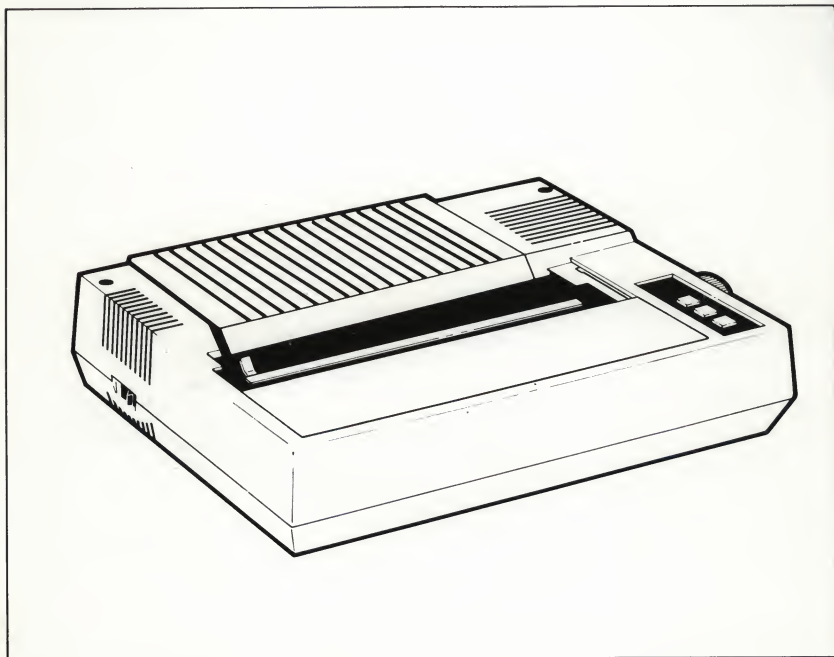
---

### NOTE

Before your HP 82906B printer was shipped, a protective paper was installed to protect the paper-out detector from vibration during transportation. Before operating the printer, be sure to remove this paper. If the printer is to be reshipped, remember to place a sheet of paper in the original position. (Refer to your printer manual for more details.)

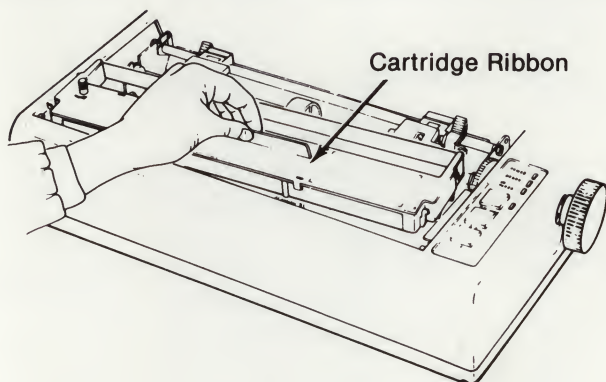
---

2. Be sure the printer power switch on the left side of the printer is OFF.

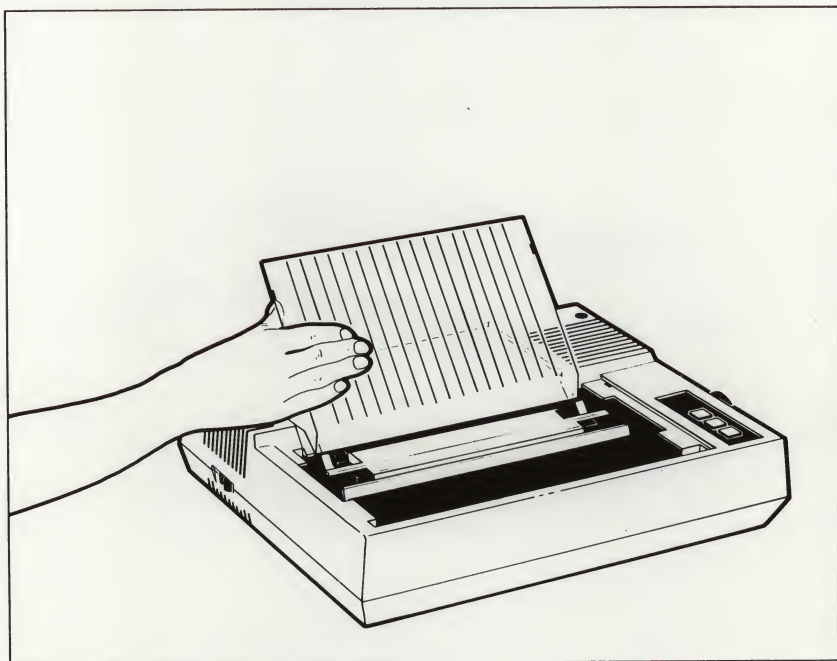




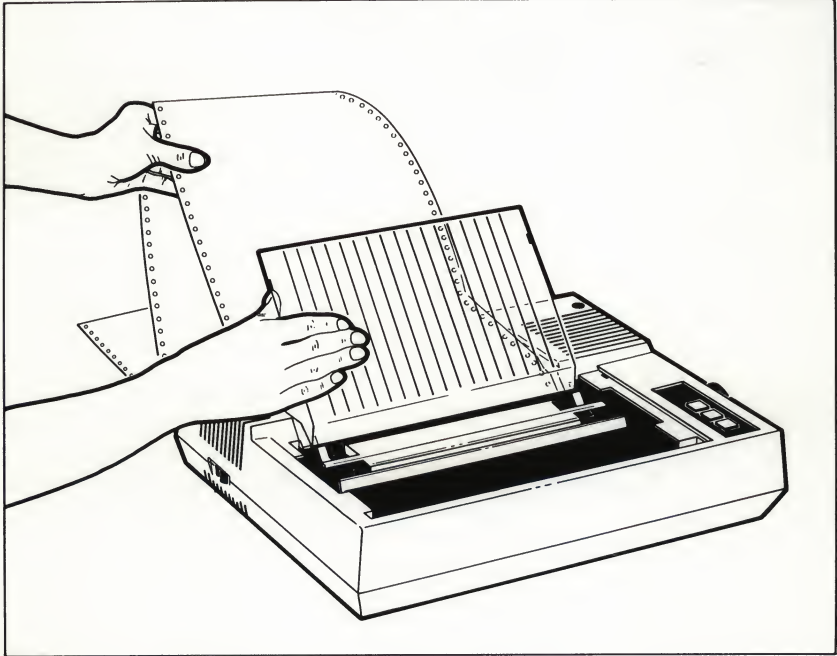
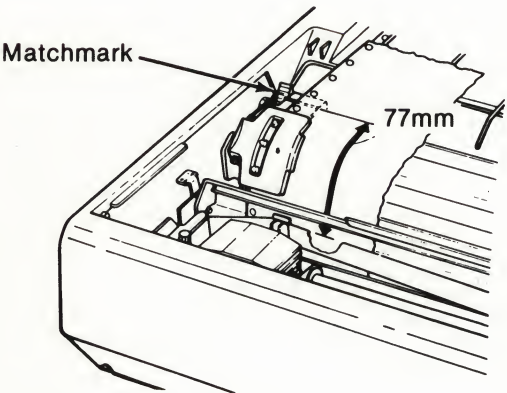
3. Remove the front cover and install the ribbon cartridge.



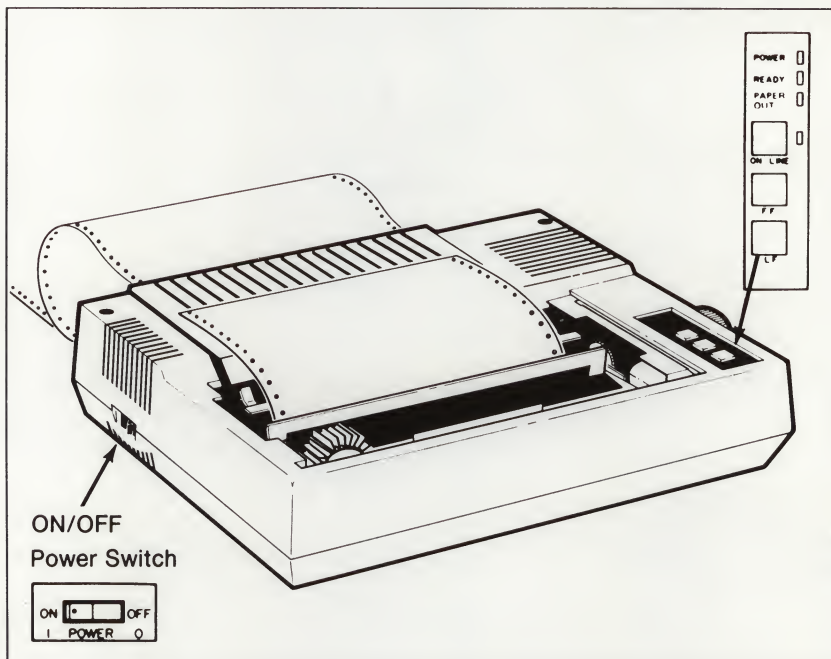
4. Install the separator. (For details, refer to the printer's reference manual.)



5. Install either cut sheet or fanfold paper and set top of form.



6. Plug the power cord into the printer and then the wall outlet.
7. Run the printer's self-test by pressing the POWER switch on the left side of the printer to the ON position while, at the SAME time, pressing the LF switch on the printer control panel.



The following characters are then printed, and will continue to repeat until you turn the POWER switch to the OFF position:

[illegible]

8. Turn the printer and your system processor OFF.
9. Connect the cable to the printer and then the system processor.

# How Do I Install A Plotter?

In this section, you will connect your plotter to the HP 150 system processor.

---

## NOTE

Each plotter comes with its own manual. Be sure to keep the plotter reference manual, since you may have questions that are not answered in this manual.

---

Installation instructions for the following Hewlett-Packard plotters are provided in this section:

HP 7470A

HP 7475A

These plotters may be connected with either an HP-IB or an RS-232 cable, depending on the option you ordered. (Instructions for connecting either cable to the system processor are discussed in the first part of this chapter.) The voltage for your plotter has been set at the factory.

---

## CAUTION

**DO NOT USE EXTENSION CORDS UNDER ANY CIRCUMSTANCES.** Such use may result in data errors and increase the risk of safety hazards. If you wish to use a multiple outlet strip to plug in the components of your system, you must use one which utilizes grounded three-prong outlets and incorporates a circuit breaker.

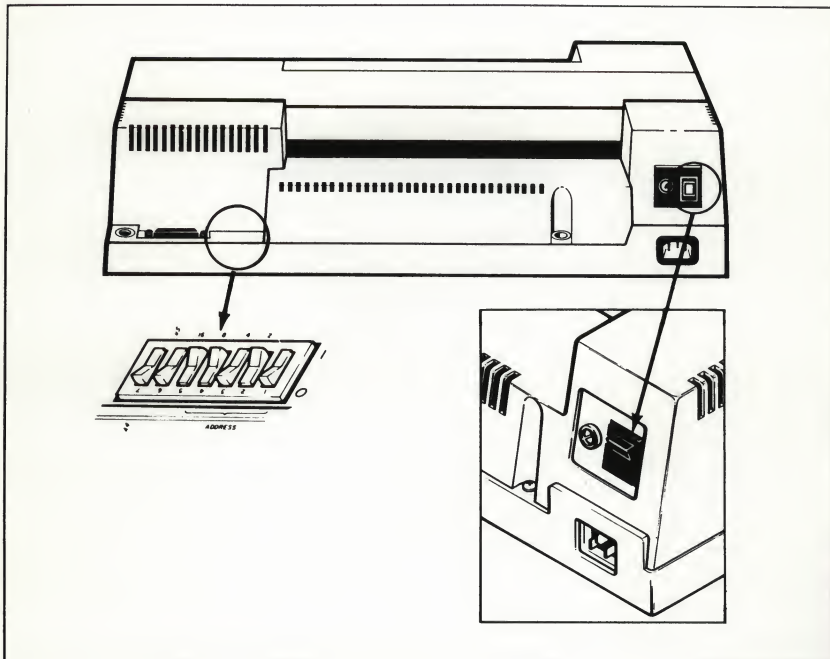
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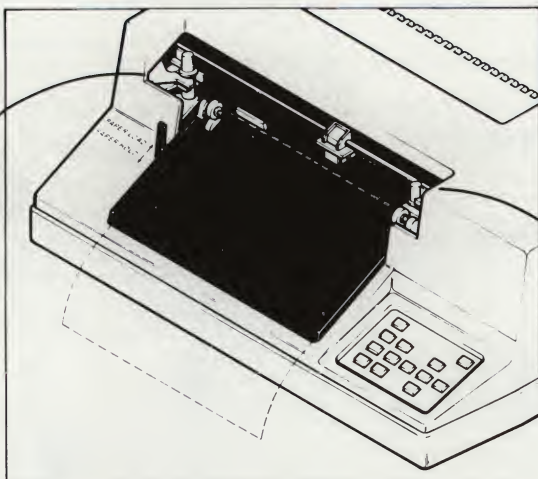


## Installing Your HP 7470A Plotter

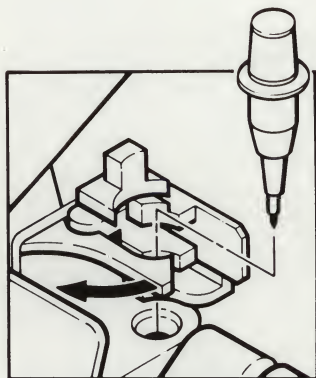
1. Be sure the power switch on the rear panel of the plotter is OFF.
2. Set the address switches on the rear panel as shown below:



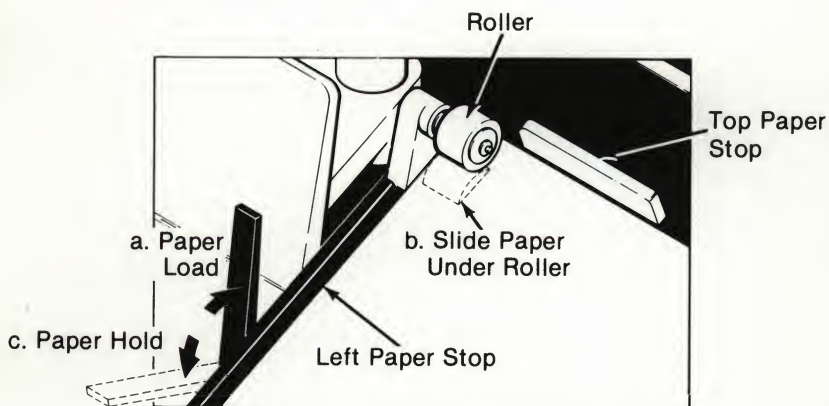
3. Plug the power cord into the plotter and then into the wall outlet.
4. Install pen(s). Remember to pull down the pen cappers so that the pens do not dry out.



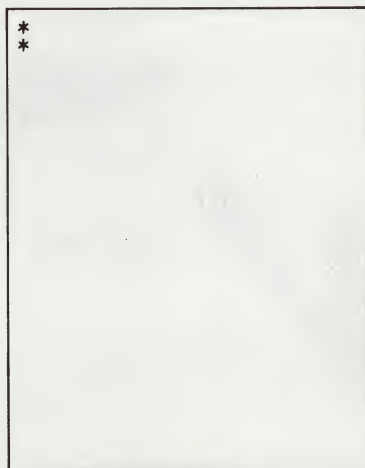
HP 7470A -Front Panel-  
Paper and Pens in Place



5. Install paper as follows:
- Raise the paper load lever.
  - Slide the paper under the roller.
  - Lower the paper load lever.



6. Run self-test for the plotter by pressing the PEN UP button on the front panel at the same time you turn the power switch ON. The self test prints asterisks (or stars) down the page until you turn the power switch OFF.



Self-Test Example

If there is no action from the plotter, check the following:

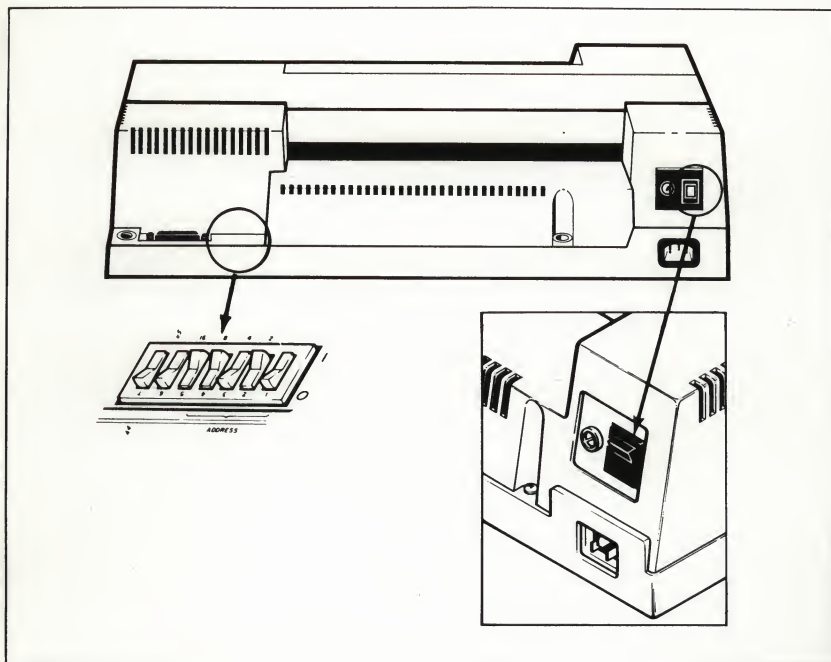
- a. The plotter is ON.
- b. The plotter is plugged in.
- c. The wall outlet's circuit breaker is ON.

If all of the above are verified and your plotter still fails to function, contact the person from whom you purchased your system.

7. Turn the power switches on the plotter and the system processor OFF.
8. Connect either the HP-IB or RS-232 cable to the plotter and then to the system processor.
9. Turn the power switches on the plotter and the system processor ON.

## Installing Your HP 7475A Plotter

1. Be sure the power switch on the rear panel of the plotter is OFF.
2. Set the address switches on the rear panel as shown below:



3. Plug the power cord into the plotter and then into the wall outlet.
4. Load the six-pen carousel as follows:
  - a. Raise the plexiglass cover and lift the pen carousel straight out.
  - b. Load the six-pen carousel with the following pens, as shown in the illustration below. (These pens will be used for self-test after the plotter is set up.)

Pen 1 - Thick Black (P.7)

Pen 2 - Thin Black (P.3)

Pen 3 - Thin Red (P.3)

Pen 4 - Thin Green (P.3)

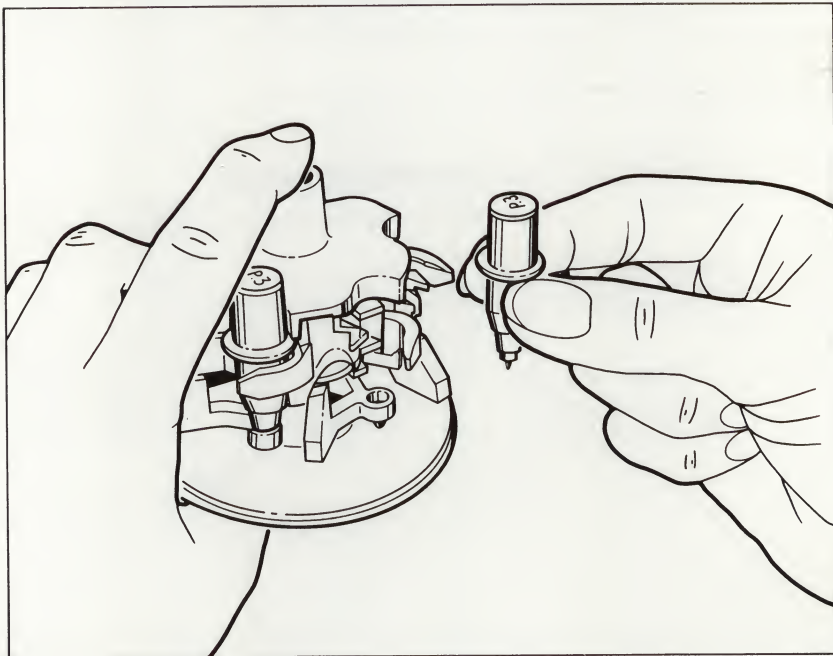
Pen 5 - Thin Blue (P.3)

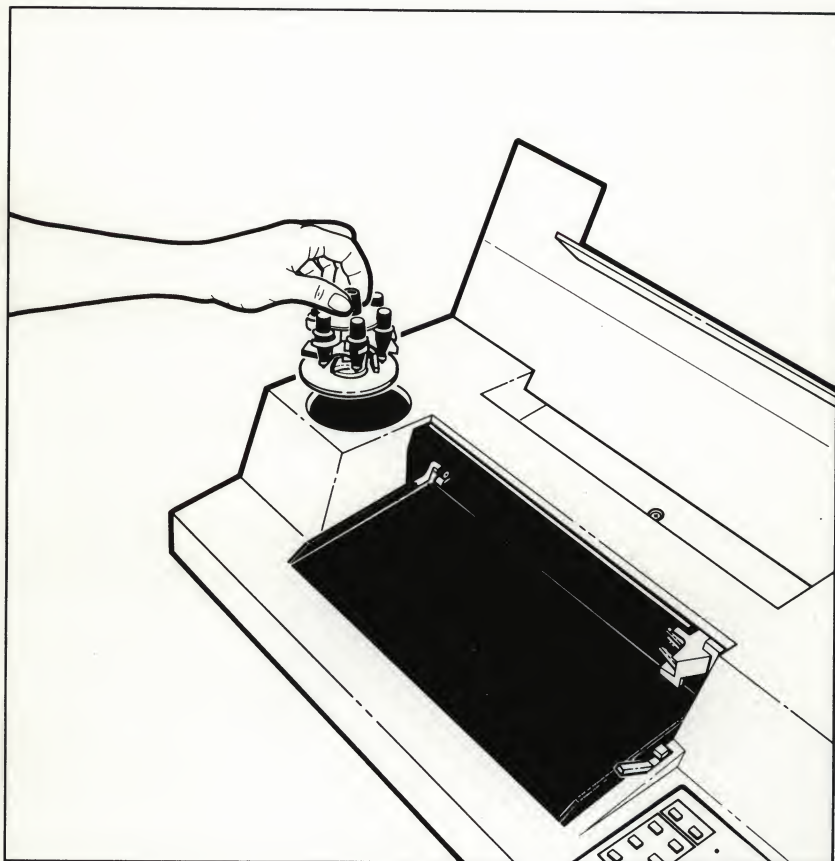
Pen 6 - Thin Violet (P.3)



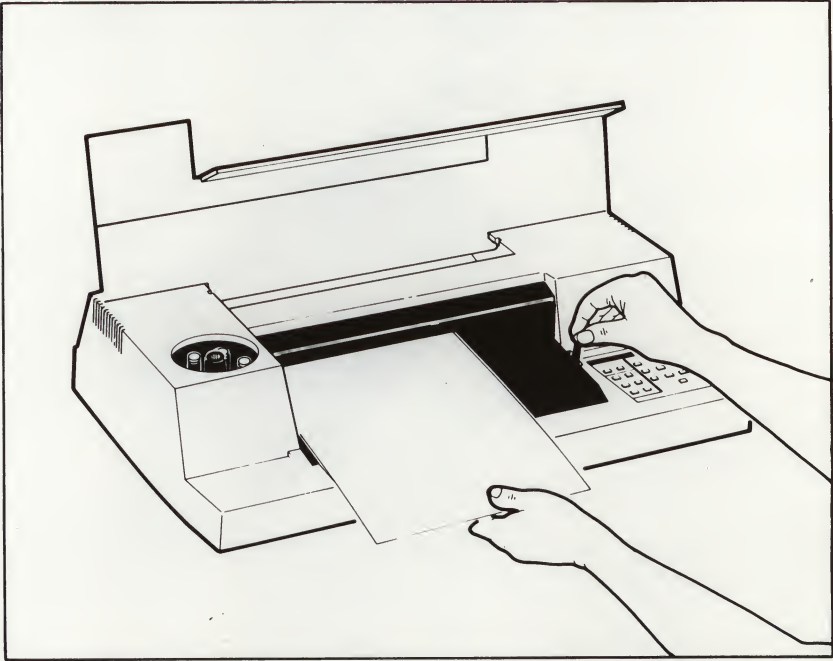
Remember to pull down the pen cappers so that the pens do not dry out.

- c. Drop the pen carousel into the plotter and turn it.





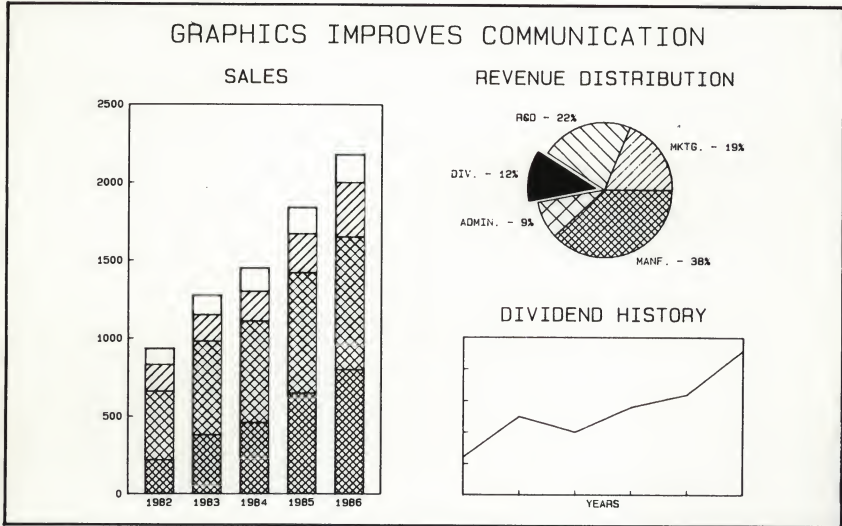
5. Install either 8½"×11" (210mm×197mm) or 11"×17" (297mm × 420mm) paper as follows:
- a. Raise the paper load lever.
  - b. Slide the paper under the roller.
  - c. Lower the paper load lever.
  - d. Select the paper size (refer to the manual shipped with your plotter for instructions).



To change the paper size, refer to instructions in the manual shipped with your plotter.

6. Run self-test for the plotter as follows:

- a. Simultaneously press the P2 and P2 buttons on the front panel while turning the power switch ON.
- b. Continue depressing P1 and P2 until the pen carousel turns.
- c. Release P1 and P2, and the self-test will plot as shown in the example below. (If you wish to stop the self-test plot, simply turn the power switch OFF.)



If there is no action from the plotter, check the following:

- a. The plotter is ON.
- b. The plotter is plugged in.
- c. The wall outlet's circuit breaker is ON.

If all of the above are verified and your plotter still fails to function, contact the person from whom you purchased your system.

7. Turn the power switches on the plotter and the system processor OFF.
8. Connect either the HP-IB or RS-232 cable to the plotter and then to the system processor.
9. Turn the power switches on the plotter and the system processor ON.





# How Do I Install An Accessory Board?

There are several accessory boards available from Hewlett-Packard which you may purchase to install in your HP 150.

Installation instructions are shipped with each accessory board, which you should place in this section of the manual. In addition, a cover plate unique for that accessory board (to cover the accessory slot in the rear panel) may also be shipped with the accessory board you purchase.

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## NOTE

Accessory boards may be damaged by static electrical charges occurring naturally in your work environment. Therefore, to avoid damage, it is important that you follow the directions as closely as possible for installing an accessory board.

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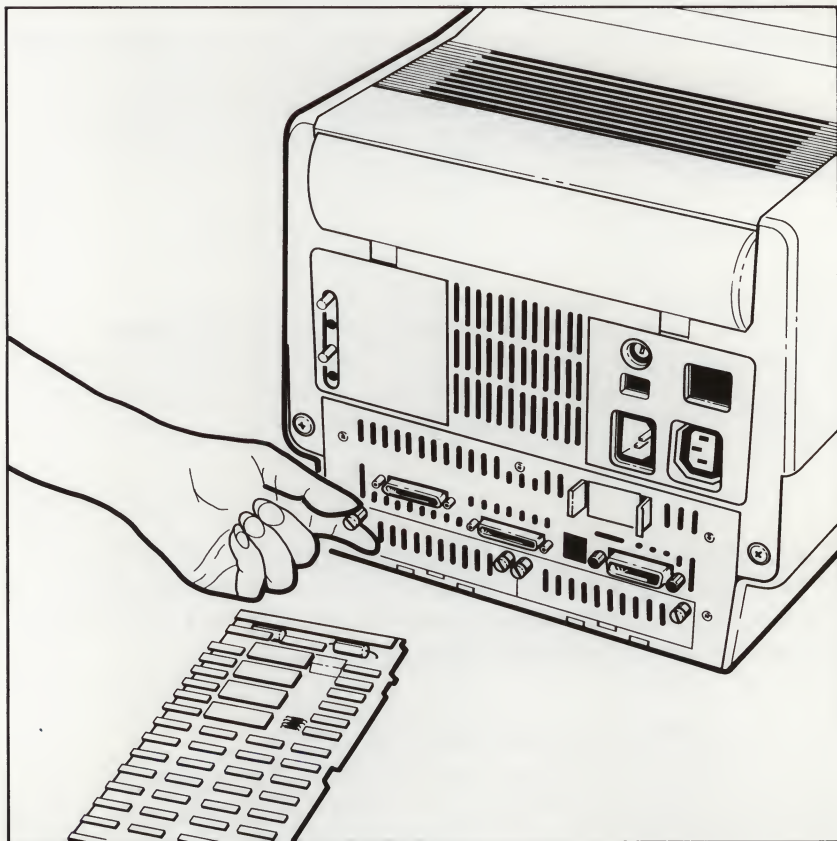
There are two slots available in the rear panel of the HP 150 for installing accessory boards. Any accessory board with the letters RAM indicated beside the part number must be loaded in slot #1 in the rear panel of your system processor.

## Accessory Board Installation Checklist

Although specific instructions are provided for installing each accessory board, the following steps are common to all:

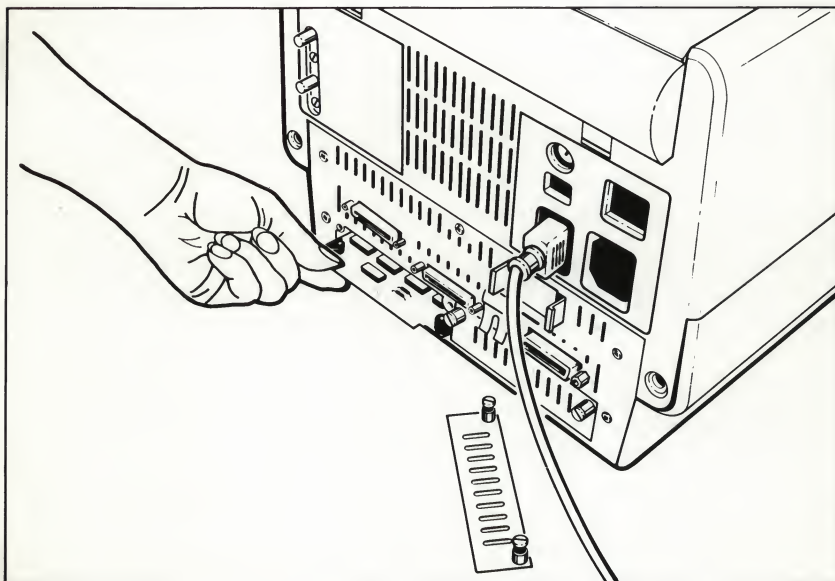
1. Turn the power switch OFF for your system processor, but leave the power cord installed. For ease of installation, you may wish to disconnect cables for your peripherals (disc drives, printers or plotters).

2. Remove the cover plate on the rear panel of your HP 150 for the accessory slot you wish to use by unscrewing the captive fastener. (These fasteners are designed to remain attached to the cover plate). This cover plate may be used again, or may be replaced with another cover plate shipped with your accessory board.



3. Take the accessory board (and cover plate, if provided) out of the package, taking care to handle the accessory board by the edges only. Save the conductive plastic bag for future use, such as if you remove an accessory board.

4. Holding it by the edges, slide the accessory board (with the components facing up) into the accessory slot. Notice that the corner plastic pieces are in a position which allow the accessory board to align in the card guides.



5. To cover the accessory slot:
  - a. Place the cover plate included in the package with your accessory board over the accessory slot on the rear panel. (If no cover plate was included in the package, replace the original cover plate.)
  - b. Align the fastener on the cover plate with the holes on the rear panel.

- c. Press the captive fastener in on one side of the cover plate so that the spring action is held down while you turn the fastener to tighten. Repeat for the other side of the cover plate.
6. If you removed any cables connecting your peripherals, reconnect them at this time.

Before you turn your system ON, check in the reference manual shipped with your accessory board to see if you need to attach any other devices (such as a telephone for a modem connection).

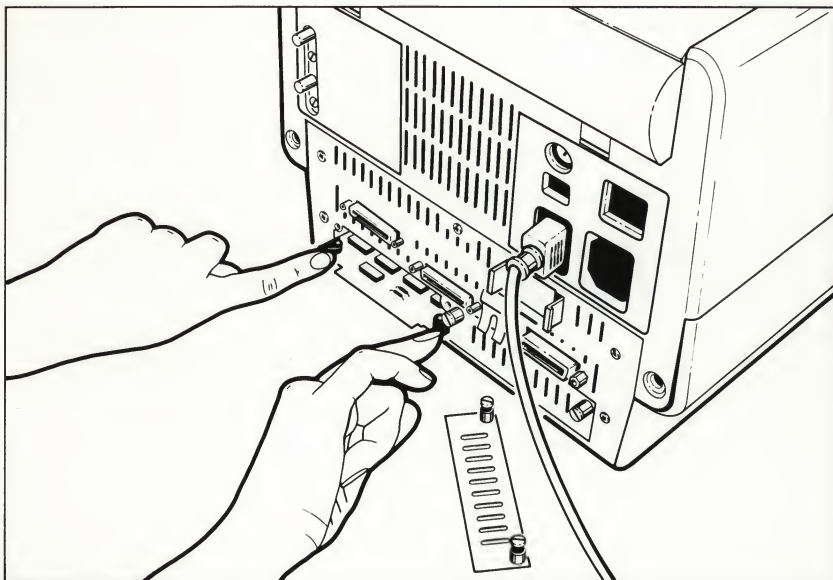
## **How Do I Remove An Accessory Board?**

Should you wish to remove an accessory board, simply follow the steps below. (You should also check the reference pages provided with your accessory board for more specific instructions.)

1. Turn your system OFF. For ease of installation, you may wish to remove cables connecting your peripheral equipment. However, remember to leave the power cord installed.
2. Remove the cover plate on the rear panel of your HP 150 covering the accessory slot by unscrewing the captive fastener. (These fasteners are designed to remain attached to the cover plate). Store this cover plate with your accessory board for future use.



3. Push the black plastic pieces at the corners of the accessory board away from the center of the board. The pivot action of the extractor(s) will start sliding the board out from the card guides in the accessory slot.



4. Place the accessory board in the conductive plastic bag in which it was shipped. Remember to handle the board by the edges only!
5. Cover the accessory slot on the rear panel of the HP 150 with the cover plate originally provided on your system processor.

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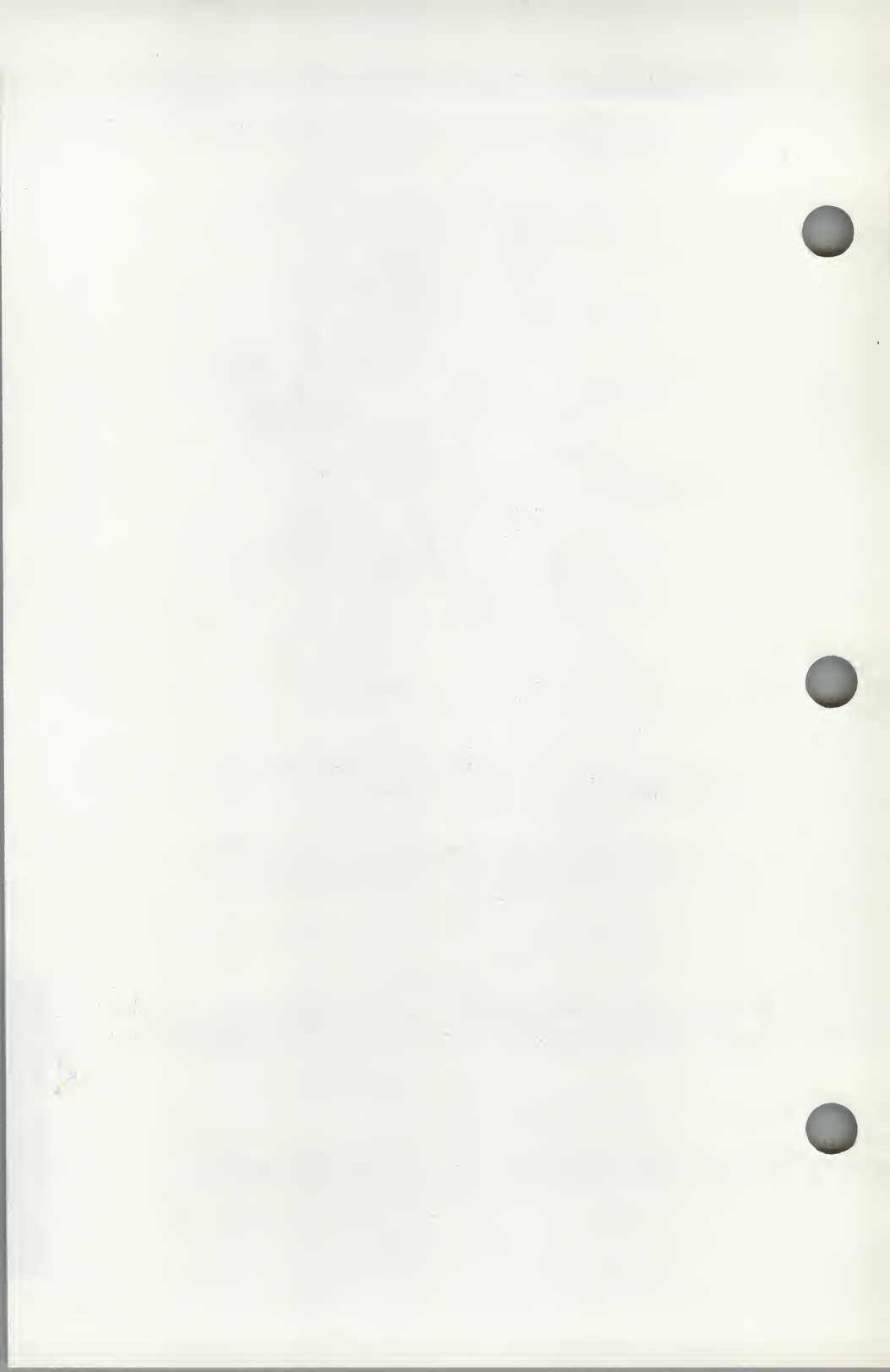
### CAUTION

Be sure to replace the cover plate over the accessory slot on the rear panel; otherwise, electrical interference with other equipment may occur.

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6. Connect any cables which you may have disconnected.





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## Chapter 3

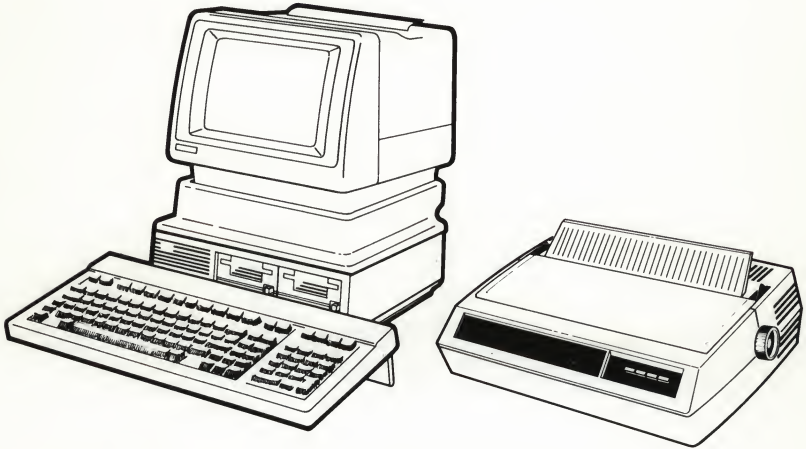
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# USING YOUR EQUIPMENT

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### What is a Standard HP 150 System?



A Hewlett-Packard personal computer includes:

- 256K of memory
- a keyboard
- this manual
- a terminal user's guide
- 2 RS232 ports, and HP-IB port to connect other components such as printers
- an HP-IB cable for connection
- a green touch sensitive screen
- an interconnect power cord to connect a disc drive
- a power cord for the system processor
- an instruction disc (Computer Tutor 150) to get you started.

In addition, you need a disc drive with your HP 150 if you intend to use it as a computer. These subjects are covered in the following paragraphs.

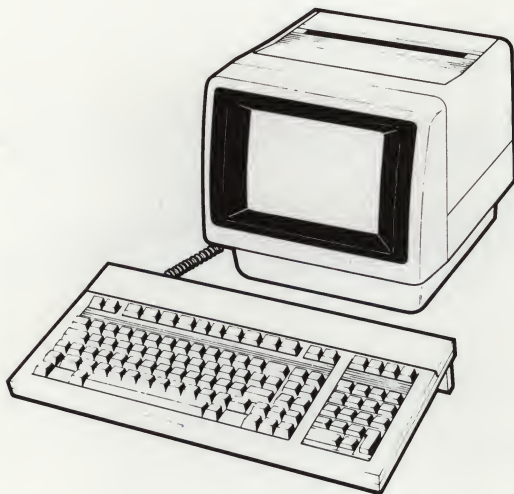
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#### **NOTE**

You may want to use Computer Tutor 150 now, or use it after you read this chapter. To use it:

- 1) Turn on your A: disc drive
  - 2) Insert the tutor disc in A:
  - 3) Turn on the HP 150
- 

## **The HP 150 Computer**



Inside the computer pictured above are electronic boards such as memory boards and peripheral boards. The most important board inside the computer is the system processor board.

The system processor is the "brain" of the computer, with the circuitry needed to run the computer inside of it. It also contains your standard 256K\* of memory. (See Memory later in this chapter.) The system processor runs the programs that you buy or write by first loading the program from a disc into memory, then executing each instruction of that program.

## Computer Memory

Computer memory refers to the amount of information a computer can hold at one time. The basic capacity for an HP 150 is 256K\* bytes of memory; every machine has a standard 256K on the processor board.

If you ordered extra memory, you received another board that you installed yourself. This memory board contains either 128K, 256K, or 384K of memory, giving you 384K, 512K, or 640K bytes of memory, total.

You use memory for two purposes. Programs are loaded into memory, then run from that memory. (Programs do not run from discs, they are only stored on discs.) The other use of memory is for your purposes; for example, if you write a letter, you use memory inside the HP 150 to hold the words while you create the letter.

Memory inside the computer holds onto what ever you load into it until you either remove it yourself, or turn the computer off. For example, let's say you loaded Series 100/Graphics from disc A, and typed some values on the screen. You decide to go to lunch. If you leave the computer as it is while you go to lunch, memory will hold Graphics and your entries until you come back. If someone were to come along and turn off the computer, however, all memory inside the computer would be cleared. You would have to reload Graphics when you came back from lunch. For this reason, save important information on a disc if you are going to leave your HP 150 for any length of time.

Disc memory, unlike computer memory, holds onto anything you store until you specifically erase the information. Turning off a disc drive does not affect information stored on a disc. (Be sure discs are removed before drives are turned off.)

\* K means 1,024. 256K would be  $256 \times 1024 = 262144$ .



# The Screen



The screen is your window into the computer. You know what is going on by looking at the screen; instructions and messages appear on the screen when an application program or disc application is running.

## Touch Screen


This screen on an HP 150 is special, in that it is sensitive to your touching it. Therefore, many times you will touch an area on the screen to tell the computer what to do; this is an alternative to typing words or pressing function keys. Often, you touch an area on the screen to make a choice, and can change your mind about the choice by touching it again to "unselect" it.

If, for some reason, you don't wish to touch the screen, you can move the cursor or pointer with the keyboard **Tab** (forward), **Shift Tab** (backward), and cursor control (**←** **→** **↑** **↓**) keys. When the arrow is where you want it, press **Select** on the keyboard to mark it as chosen.

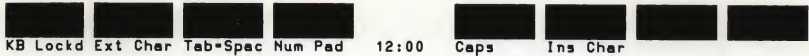
If you want to turn off touch screen, press **Ctrl Shift Menu** simultaneously. Do it again to turn touch screen back on.



## The Cursor



Your indicator on the screen is the cursor. The cursor is usually a blinking box, but can be changed to a blinking underline in the Global Configuration Menu. Each application can use the cursor in its own way, and each will let you know what to do. The cursor is moved several ways; touching the screen often moves the cursor to the place you touched. The  and cursor control keys also move the cursor.

## Status Indicators



Look at the words on the bottom line of the screen in the picture above. You may have none or all of them on your screen. The words (called status indicators) each have a different meaning.








### KB Lockd

Keyboard locked indicates that your keyboard will not communicate with the system processor. The keyboard is locked either by a program or by your typing ESC c. To unlock it from the keyboard, press  . (This may adversely affect any application program in progress.)


### Ext Char



Extended character set indicates that you are using the Roman 8 Keyboard characters shown in the Keyboard appendix of this manual.

## Tab=Spac

When this appears, pressing  causes the cursor to move to the next tab stop, leaving spaces in its wake. Tab is set to spaces by either a program or by your pressing  twice, . . An asterisk appears in the  field to show it is on; press  again to turn it off. (You can also turn it on and off in the terminal configuration menu.)  will not move to the next line automatically when Tab=Spac.

## Num Pad or Grph Pad


Numeric Pad indicates that the numeric pad values are the ones shown on the keys, that is numbers 0 - 9, the /, a comma, , tab forward and back, the - + and \* signs, and a period.


Graphics Pad indicates that the numeric pad on the right side of the keyboard is now a graphics pad; each key now represents a graphics activity such as CLEAR GRAPHICS or COPY GRAPHICS. The numeric pad is changed to a graphics pad and back by pressing  and the  key on the numeric pad. See the *HP 150 Terminal User's Guide* for more information.

12:00



The current time set in the computer is always displayed on a 24 hour clock.

#### CAPS

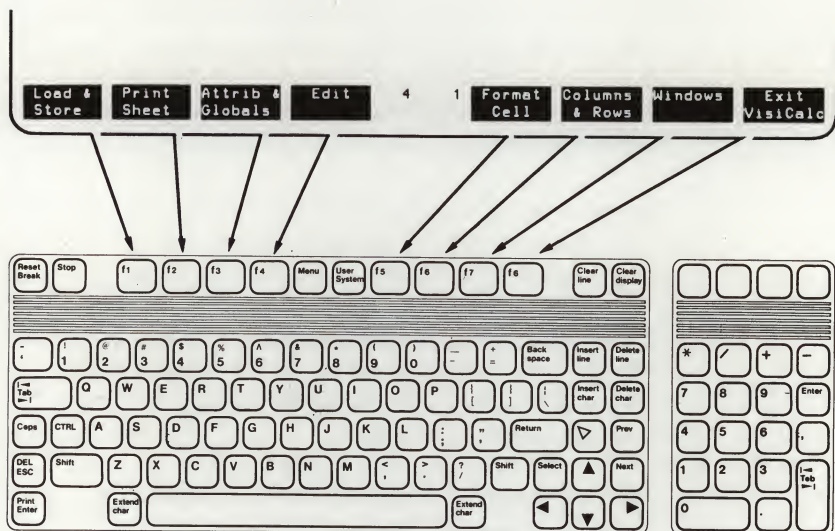
Caps are locked when this message appears. You probably pressed the  key on the keyboard; press it again to remove this message and type lowercase letters.

Insert Character indicates that anything you type will be inserted at the cursor position; if you insert characters into a full line, letters are either lost from the last column or wrap around to the next column, depending on which application you are using. You probably pressed  on the keyboard to turn on insert character; press it again to remove this message and turn it off.

Ins Char  
or  
Ins Wrap

Insert Character Wraparound indicates that anything you type will be inserted at the cursor position; if you insert characters into a full line, letters are wrapped to the beginning of the next line. You probably pressed   to turn on insert character wraparound; press it again to remove this message and turn it off.

# The Keyboard †



The computer keyboard contains a set of typewriter keys, plus some special computer-only keys. The most helpful special keys are called function keys and are labeled f1, f2, f3, f4, ... f8. Often, you will press a function key to tell the computer what to do. You know what a function key will do by looking at its corresponding label on the screen. (See the drawing above.)


As you can see above, some labels have an asterisk in them. These labels represent choices that are turned on (\*) and off (no \*); either touch the label or press the corresponding function key to toggle between on (\*) and off (no \*). You will always be told whether a label represents an action or a choice toggle in the manual describing each application program. Each application can use the key in any way that's appropriate. The following meanings are typical for most applications.

† To use the keyboard math symbols or foreign characters, see the appendix on Keyboards.





Some special keys are as follows:






The  key is used when the HP 150 is a terminal; see the *HP 150 Terminal User's Guide*.


 

Press   simultaneously for a "soft reset" of the HP 150 computer. A soft reset clears keyboard lock and screen error messages. It also turns off display functions, stops printing, and resets the internal printer.




   


Press    simultaneously for a "hard reset" of the HP 150 computer. A hard reset means that the operating system (MS-DOS) is restarted from disc A. Any program in progress is exited.



 is used when the HP 150 is a terminal; see the *HP 150 Terminal User's Guide*.







 

Press   simultaneously to return to P.A.M. from the terminal. (You pressed  on the P.A.M. screen to become a terminal.)



 

Same as  .



Press  to turn the function key labels along the bottom of the screen off and on. Pressing ,   or   will also turn them back on.



Press   simultaneously to display the user keys menu. See the *HP 150 Terminal User's Guide*.

Press these three keys simultaneously to turn touch screen on and off:





User  
System

Press  to see the last system keys you used.  
Press  twice to bring the system labels onto the screen (only works from the MS-DOS command prompt, local mode, or from a programming language such as BASIC). See System Function Key Labels later in this chapter.

Shift

User  
System


  displays function key labels used by the current application program.

CTRL

User  
System



These two keys (used simultaneously) bring the user keys to the screen.

Clear  
line


Position the cursor. Press ; the characters from the cursor to the end of that line are deleted.

Shift

Clear  
line



Press   simultaneously to blank out the line containing the cursor.

Clear  
display


Position the cursor. Press  to delete all characters after the cursor from display memory.

Shift


Clear  
display

Press   simultaneously to clear all lines from display memory.


Backspace

Press  to move the cursor back one space on the screen, erasing the character to the left.

Insert  
line

Position the cursor. Press . A blank line appears at the position of the cursor, and following lines are moved down.

Delete  
line

Position the cursor. Press  to remove the line containing the cursor and move all subsequent lines up.

Tab

Press **Tab** to move the cursor to the next set tab. (Tabs are set manually by pressing **User System** twice, then **margins/tabs/col**, then **SET TAB**; a tab is set at the cursor position. To remove, press **CLEAR TAB** or **CLR ALL TABS** instead of **SET TAB**.)

Some application programs also let you set tabs.

Insert  
char

Position your cursor within a line, press **Insert char**, then type characters. (Ins char now appears at the bottom of your screen.) The characters you type will be inserted at the cursor; if you type letters into a full line, the letters in the last column are lost. Press **Insert char** again to turn it off.

Shift   Insert  
char

Position your cursor within a line, press **Shift** and **Insert char**, then type characters. The characters you type will be inserted at the cursor; if you type letters into a full line, the letters in the last column are wrapped to the next line. All following lines are adjusted. Press **Shift** **Insert char** again to turn it off.

Delete  
char

Position the cursor at a character. Press **Delete Char** to remove that character from the screen. Subsequent characters move left to fill the gap.

Caps

Press **Caps** to make all letters you type on the screen capitals. (Caps now appears at the bottom of your screen.) Press **Caps** again to return to lowercase.

CTRL

Press **CTRL** in combination with another letter to send control characters to the computer; see the *HP 150 Terminal Owner's Guide* for details.

Return

Press the Return key to signal completion of an entry. The cursor moves to the next line, column one.



Press Cursor Home to move the cursor to line 1 column 1 of the screen (and display memory).

Shift



Press **Shift** cursor home simultaneously to move the cursor to the last line, last column of the screen (and display memory).



Press Cursor Up to move the cursor up one line.

Shift



Press **Shift** and **Cursor Up** to move lines of text on the screen up, displaying any lines below.



Press Cursor Left to move the cursor left one space. You can keep moving left from the first space of a line to the last space of the previous line.



Press Cursor Right to move the cursor right one space. You can keep moving right from the last space of a line to the first space of the next line.



Press Cursor Down to move the cursor down one line.

Shift



Press **Shift** **Cursor Down** to move lines of text down on the screen, displaying any lines below.








Press **Prev** to see the previous page (24 lines if that many exist) of display memory.









Press **Next** to see the next page (24 lines if that many exist) of display memory.









Use the **DEL-ESC** key in combination with other letters, as described in the *HP 150 Terminal User's Guide*.

Press  combined with other keys to produce uppercase letters and type the symbols above on double function keys. For example,   (simultaneously) performs the Reset function.   produces the DEL character.

 Instead of touching the screen, you can position the cursor or pointer with the  and  keys. Then, press  to mark the choice at the cursor or pointer.

 Press  (Ext Char appears at the bottom of the screen) to use the Extended Roman character set\* on your keyboard. You might do this when composing a letter sent to Europe. (See Appendix B.)

 Press  when the HP 150 is used as a block mode terminal. (See the advanced HP 150 owner's guide or the *HP 150 Terminal User's Guide*.)

  Press   to print the text on the screen to the default printer. This can be done from Basic or Local Mode, or the MS-DOS command prompt.

Some keys also perform graphics control functions. See the *HP 150 Terminal User's Guide* for more information.

*\* To use extended characters, the ASCII 8 bits entry in Terminal Configuration must be set to yes. To print extended characters, parity must be none and the Databits entry (for the port the printer is on) must be 8.*



# System Function Labels

device control	margins/ tabs/col	service keys	modes	enhance video	define fields	set time	config keys
-------------------	----------------------	-----------------	-------	------------------	------------------	-------------	----------------

Touch these labels to bring other sets of labels to the screen. In general:

- Device control allows you to print information on your printer.

See *Printing From Basic or MS-DOS* in this chapter for more information on device control.

- Margins/tabs/col deals with the screen format when the HP 150 is used as terminal.

See the *HP 150 Terminal User's Guide* for more information on margins/tabs/col.

- Service keys allows you to perform several tests on the system processor.

See the appendix on Maintenance for more information on service keys.

- Modes is explained below.
- Enhance video allows you to change the video enhancements that you can do on the screen when defining forms on the HP 3000.



- Define fields brings up a level of function keys to define forms on the HP 3000. (See the *HP 150 Terminal User's Guide*.)
- Set time allows you to change the time shown at the bottom of the screen.
- Config keys allows you to change the HP 150 configuration; configuration basically controls the operation of your HP 150. A config menu is a list of choices; for example, do you want an HP 150 computer or an HP 150 terminal? Do you want the cursor as a box or a dash? Both the system processor and the operating system (MS-DOS) can be configured.

See the appendix on Configuration for more information on config keys.

**modes**

Press **modes** to display the following labels on the screen:

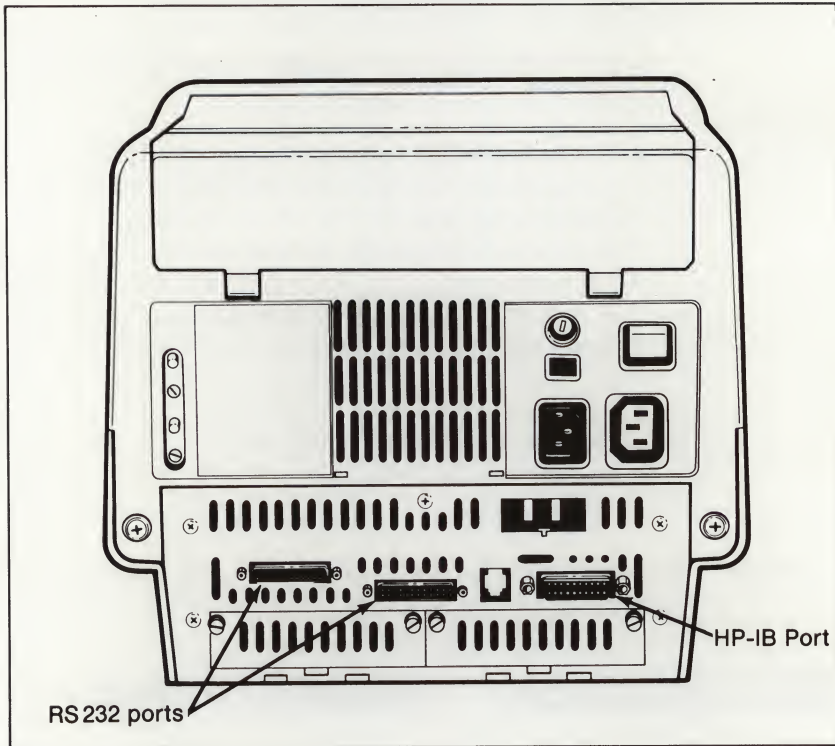
LINE MODIFY	MODIFY ALL	BLOCK MODE	REMOTE MODE	SMOOTH SCROLL	MEMORY LOCK	DISPLAY FUNCTNS	AUTO LF
----------------	---------------	---------------	----------------	------------------	----------------	--------------------	------------

Touch these labels to activate (\*) or deactivate (no \*) these functions.

Pressing **REMOTE MODE** removes the asterisk in the label; this makes the HP 150 act as neither a computer nor terminal (Local Mode). You can type to the screen , but nothing else. Press **REMOTE MODE** again to restore the asterisk.

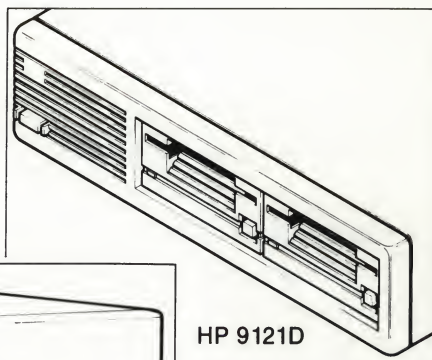
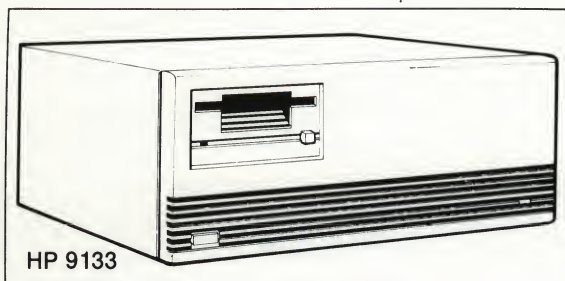
See the *HP 150 Terminal Owner's Guide* for more information about all of the modes keys.

# RS 232 and HP-IB Ports



Ports on a computer are like outlets on a stereo receiver; use them to connect other devices. (A stereo connects with speakers while a computer connects with a printer. A stereo would connect to a tape deck, while a computer connects to a disc drive.) The main thing to keep in mind is to use the correct ports for your devices. In general, this is easy because RS232 connectors won't fit on an HP-IB port and vice versa. (See Chapter 2 for more information.)

# Disc Drives



You use discs to keep information for later use; disc memory is the only place to store files on an HP 150. The equipment that reads information from a disc, and writes information to a disc is a disc drive. (For more information on discs, see the chapter on Discs.)

Flexible discs should be placed in (or removed from) a drive only when the drive is running. This preserves the disc drive head and protects you from loss of data. (The head movement of the drives when the system is turned on or off can damage a flexible disc.)

Disc drives are named by letters of the alphabet (see above). The A: drive is traditionally used to load MS-DOS and P.A.M.; after loading them, you can take the MSDOS disc out and use other discs.

## Loading the Operating System

MS-DOS (the operating system) is loaded into computer memory from your A: disc drive. To accomplish this, turn on your disc drive, be sure that a copy of the operating system disc is in the A drive, and turn on the system processor. (If the system is already turned on, press    to do the same thing.)

If the message "Op Sys disc not found. Press RETURN to clear" appears, be sure that a copy of MS-DOS is in the A: drive.

If the message "Not enough memory to boot. Press RETURN to clear" appears, you have a memory problem. MS-DOS needs about 32K to load into and you don't have that much available. If you haven't done anything to cause this problem, contact your support person.

After the operating system is loaded, you can remove the disc from drive A and insert any other disc you want to use.

## Loading Application Programs

Disc drives are named by letters (A: B: C: ,etc.) When you want to indicate a particular drive, you will use its letter. When you start your system (see above), the Personal Applications Manager (P.A.M.) checks all of your discs. P.A.M. then lists every installed application program it can find on every disc; load and run these programs by touching their name on the screen, then touching **Start Applic.**

See the chapter on Personal Applications Manager for more information.

## Storing Files

When you store files that you create, you will specify a disc and a file name. The file is stored under that name on the disc you indicate. If you ever forget to name a disc and only name a file name, the file will be stored on the disc that is the default at the time (usually the A: drive).

If you divide your disc into individual areas called directories (see the chapter on Files), you will not only decide which disc to store a file on, you will also decide under which directory to store the file. In this case, if you name a disc but no directory, the default directory is used (usually the root). The file would be stored in the default directory.

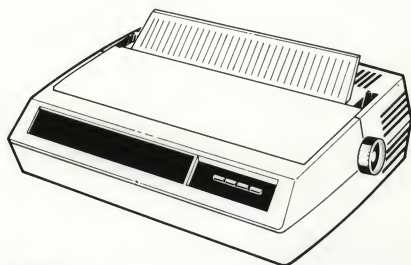
If the message "Op Sys device not found. Press RETURN to clear" appears, be sure disc drive A: is turned on.

## The HP 150 Terminal User's Guide

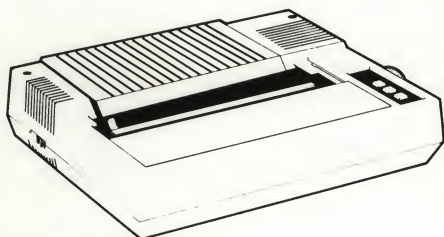
When the HP 150 is a terminal, use its terminal guide of instruction and explanations. This manual was shipped with your HP 150



# Printers



HP 2602A



HP 82906A

A printer provides paper copies of any information that you wish to send it. You may have a faster, less expensive printer that forms characters with dots (HP 82906B), or you may have a slower letter-quality printer that prints characters like a typewriter (HP 2602A).

## Printing from Application Programs

Application programs allow you to print information that you've created with that application; many of them use the HP 150 File Manager (discussed in the P.A.M. chapter in this book) to print. See each application manual for specific details about printing.

## Printing From Programming Languages or From MS-DOS

If you are not using P.A.M or any application program, you can still print by using the print features inside the system processor. Do this either from the MS-DOS command prompt, local mode, or from a programming language such as BASIC.



From the MS-DOS command prompt or programming language prompt, press:

**Remote Mode** (the asterisk disappears).

User  
System

User  
System

device	margins/	service	modes	1	1	enhance	define	set	config
control	tabs/col	keys				video	fields	time	keys
Tab+Spac				10:22		CAPS	Ins Char		

If you want to send everything on the whole screen to your printer just the way it is, position your cursor at the top of the text and touch:

device		"to"	ADVANCE	1	1	ADVANCE	COPY	COPY	COPY
modes		devices	PAGE			LINE	ALL	PAGE	LINE
Tab+Spac				10:22		CAPS	Ins Char		

If you want to alter the way you print, touch:

device		"to"	ADVANCE	1	1	ADVANCE	COPY	COPY	COPY
modes		devices	PAGE			LINE	ALL	PAGE	LINE
Tab+Spac				10:22		CAPS	Ins Char		

To lock the keyboard (except for **BREAK**, **RESET**, and **RECORD MODE**) and have all lines sent to a 256 character buffer before being printed, touch:

device	RECORD	LOG	LOG	1	1		COMPRESS	REPORT	METRIC
control	MODE	BOTTOM	TOP				PRINT	PRINT	PRINT
Tab+Spac				10:25		CAPS	Ins Char		

**NOTE**

After printing, press **RESET** or **RECORD MODE** to turn off record mode.

To have each line you type print when you press Return \*, touch:

device control	RECORD MODE	LOG BOTTOM	LOG TOP	1   1	10:25	CAPS	COMPRESS PRINT	REPORT PRINT	METRIC PRINT
Tab=Space									

To later fill display memory with 48 lines, then have only the top line print as you add line 49, touch:

device control	RECORD MODE	LOG BOTTOM	LOG TOP	1   1	10:25	CAPS	COMPRESS PRINT	REPORT PRINT	METRIC PRINT
Tab=Space									

If you want narrow characters (132 characters per line instead of 80) to print later on your internal printer only, touch:

device control	RECORD MODE	LOG BOTTOM	LOG TOP	1   1	10:25	CAPS	COMPRESS PRINT	REPORT PRINT	METRIC PRINT
Tab=Space									

If you want Report Format (three line top margin, 60 lines of text when you print, and a three line bottom margin followed by a page mark) to print on your internal printer only, touch: \*\*\*

device control	RECORD MODE	LOG BOTTOM	LOG TOP	1   1	10:25	CAPS	COMPRESS PRINT	REPORT PRINT	METRIC PRINT
Tab=Space									

If you want Metric Format (three line top margin, 64 lines of text when you print, and a three line bottom margin followed by a page mark) to print on your internal printer only, touch: \*\*

device control	RECORD MODE	LOG BOTTOM	LOG TOP	1   1	10:25	CAPS	COMPRESS PRINT	REPORT PRINT	METRIC PRINT
Tab=Space									

Choose a printer by touching:

device modes		"to" devices	ADVANCE PAGE	1   1	10:22	CAPS	ADVANCE LINE	COPY ALL	COPY PAGE	COPY LINE
Tab=Space										

\* LOG BOTTOM and LOG TOP can't both be on together.

\*\* REPORT PRINT and METRIC PRINT can't both be on together.

Press **SERIAL DEVICE** if you are using an RS232 or RS422 printer. Press **HP-IB DEVICE** if you are using an HP-IB printer\*. Press **INTERNAL PRINTER** to use the built in printer (if you have it). **TO DISPLAY** is used when the HP 150 is a terminal.

device control	SERIAL DEVICE	HP-IB DEVICE	INTERNAL PRINTER	1	1	TO DISPLAY			
		Tab-Spac		10:26		CAPS	Ins Char		

If you want to move a page of paper through the printer (form feed), touch:

device modes		"to" devices	ADVANCE PAGE	1	1	ADVANCE LINE	COPY ALL	COPY PAGE	COPY LINE
		Tab-Spac		10:22		CAPS	Ins Char		

If you want to move the paper in the printer up a line, touch:

device modes		"to" devices	ADVANCE PAGE	1	1	ADVANCE LINE	COPY ALL	COPY PAGE	COPY LINE
		Tab-Spac		10:22		CAPS	Ins Char		

If you want to print all text from the cursor to the bottom of text (home the cursor for the whole text), touch:

device modes		"to" devices	ADVANCE PAGE	1	1	ADVANCE LINE	COPY ALL	COPY PAGE	COPY LINE
		Tab-Spac		10:22		CAPS	Ins Char		

If you want to print the contents of the screen from the cursor to the bottom of the screen (home the cursor to print the whole screen), touch:

device modes		"to" devices	ADVANCE PAGE	1	1	ADVANCE LINE	COPY ALL	COPY PAGE	COPY LINE
		Tab-Spac		10:22		CAPS	Ins Char		

\* If you have two HP-IB printers, the one set to address 1 is used. (See Chapter 2 for more about HP-IB addresses.)

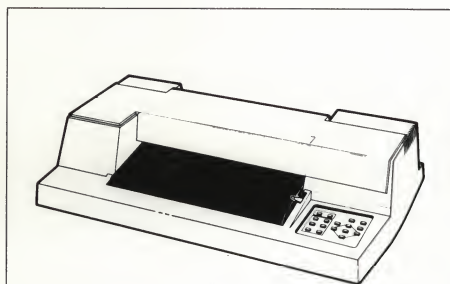
If you want to print the line containing the cursor, touch:

device modes	"to" devices	ADVANCE PAGE	1 1	ADVANCE LINE	COPY ALL	COPY PAGE	COPY LINE
	Tab-Spac		10:22	CAPS	Ins Char		

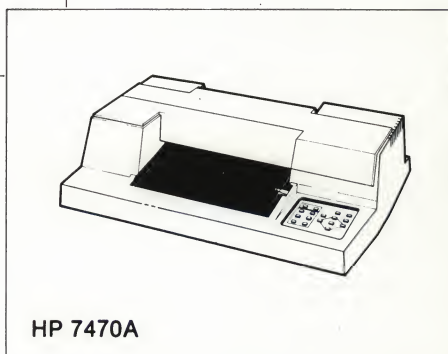
After printing, press **Remote Mode** to return the asterisk, and have the HP 150 act as a computer again.

You can also print with the P.A.M. print command (see the chapter on P.A.M.), from the MS-DOS print command (see the chapter on MS-DOS), or from the keyboard (see this chapter, the **Print Enter** key).

## Plotters



HP 7475A



HP 7470A

Use the plotter with the program Series 100/Graphics and with other graphics programs. You will be able to draw pie charts, bar charts, line charts, and words on either paper or overhead transparencies. Learn more about your plotter from the manual shipped with it.





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# Chapter 4

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## FILES

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A file is a collection of information stored under a certain name on a disc. The steps to create a file are:

### Creating a File

- 1) Run an application and create some data
- 2) Choose a file name
- 3) Decide which disc to store the file on (A:, B:, C:, etc)
- 4) Optionally decide which directory to store the file under
- 5) Store the file from the application, using a disc letter, an optional directory path, and a legal file name.

These steps are detailed below.

### Creating Data

The most common way to create data is from within applications. You usually run an application, create some data within that application, then save the data under a file name.

The kind of information you save depends on which application you used to create it. For example, VisiCalc is a spreadsheet full of numbers and labels; a file created with VisiCalc would contain numbers and labels. MemoMaker and WordStar, on the other hand, usually create memos and letters; a file created with MemoMaker would contain a lot of words.

Each application tells you how to create a file from within that application.

Another way to create files is by writing a program in the MS-DOS line editor. This process is described in the *HP 150 Advanced User's Guide*.

## Choosing a Filename

Filenames consist of one to eight characters, except for the characters . [ ] ? \ = \* : ; - < > . Those twelve characters are the only ones that cannot be used. For example:

Chapter1  
Myletter  
You&You  
Memo#123  
A  
#2Letter

are all legal file names. They are one to eight consecutive characters with no illegal characters. There are some file names that either MS-DOS or Hewlett-Packard want to use exclusively. Do not use these file names:

AUX	MS-DOS uses this file name for files sent to or from an auxiliary device.
CON	MS-DOS uses this file name for data sent to or from the keyboard .
NUL	MS-DOS programmers use this file name.
PRN	MS-DOS uses this file name to refer to the print device.

In addition to the eight letters, you can add a file extension to a file name if you wish, although it is not necessary. A file extension is a period followed by three letters. The same restrictions ( . [ ] ? \ = \* ; ; - < > ) apply. For example:

Chapter1.Own  
Myletter.MEW  
You&You.1  
Memo#123.RW  
A.NEW  
#2Letter.OLD

are all legal file names with legal file extensions. The file name is one to eight consecutive legal characters, and the file extension is one to three legal characters.

Some file extensions are reserved by MS-DOS or by an application program for their own use. Do not use these extensions:

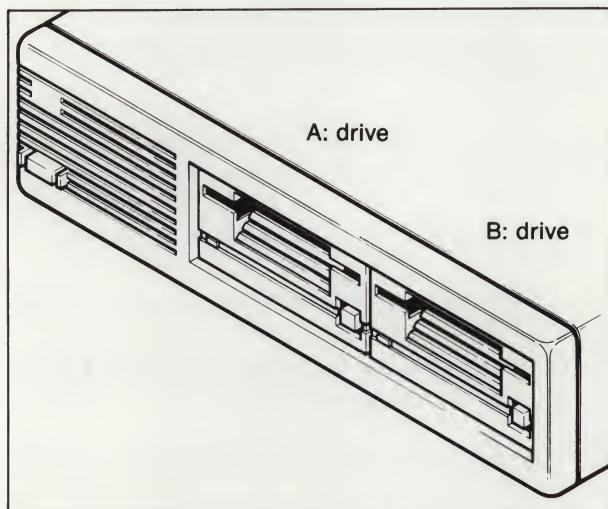
- |       |   |
|-------|---|
| .BAR  | Graphics uses this extension for bar charts.  |
| .COM  | MS-DOS uses this extension for program files.                                       |
| .DIF  | VisiCalc uses this extension for files created to send data to another application. |
| .EXE  | MS-DOS uses this extension for program files.                                       |
| .IN\$ | The install program uses this extension.  |
| .LIN  | Graphics uses this extension for line charts.                                       |
| .LNK  | The MS-DOS linker uses this extension for files in the MS-DOS editor EDLIN.         |
| .RM\$ | The install program uses this extension to remove files.                            |
| .TXT  | The application program Graphics uses this extension for text charts.               |
| .PIE  | Graphics uses this extension for pie charts.  |
| .VC   | VisiCalc uses this extension to refer to its data files.                            |

**.VOL** P.A.M. uses this extension.

**.MSG** HP uses this extension for message files.

Once you decide on a file name, you need to decide where to store the file. You have several options to choose from: you can store the file on any of your discs (labeled A, B, C, and so on); once you decide on the disc, you can store the file in any directory on that disc.

A disc is named by the drive it is in at the time. If a disc is in drive A, it is referred to as A (e.g. A:Filename). Move the same disc to drive B and the file name becomes B:Filename.



## What is a Directory Path?

First of all, what is a directory? A directory is a list; think of a phone directory, which is a list of people's names, their addresses and their phone numbers. A disc directory is very similar to a phone directory; it is a list of files, their sizes, and the last date they were altered.

If things are simple, you have only one directory. For example, in Ames, Iowa all the listings are in one phone book. On a flexible disc, you would probably keep it simple and have one directory. Think now of New York; what would happen if all New York phone numbers were in one directory? Queens listings would be included with Manhattan, the Bronx, and so on, all in alphabetical order by last



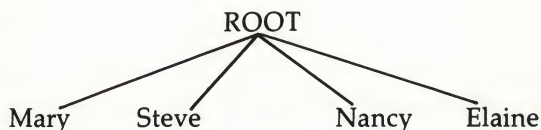
name. To find a name, you would have to look through a huge directory. A 10 megabyte disc is big enough to be a "New York." The root directory (base directory that is always present) could hold 1024 files, which are probably too many for one directory. If you think you have too many files for one directory, you can create subdirectories.

Subdirectories are smaller groups of files. For example, you could divide directories by user; Steve, Nancy, Elaine, and Mary all store their files on a 10 megabyte disc, so you could create four subdirectories named Steve, Nancy, Elaine, and Mary (names are up to eight characters long, with an optional three letter file extension). After that, each person would store their files under their own name.

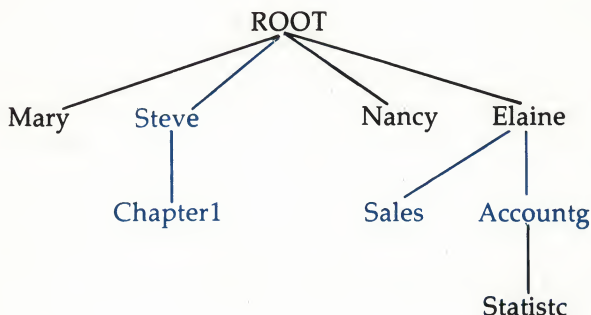
## How Do I Indicate a Subdirectory?

The top level of a directory is called a root. A root is always present on each disc; you don't create a root. All application programs are installed at the root; they cannot run from any other directory.

If a directory looked like this:



you would store the file Chapter1 in Steve's directory on disc A: by indicating `A:\STEVE\CHAPTER1`. If Elaine decided to group her files under two subdirectories (Sales and Accountg) in her directory, the directory would then look like this:





If Elaine wanted to access the file `Statistic` in the subdirectory `Accountg` on Disc C, she would indicate

`C:\Elaine\Accountg\Statistic`. This would tell MS-DOS "look under the subdirectory `Elaine`, then the subdirectory `"Accountg"` to find the file `Statistic`; this is the path you want MS-DOS to look at.

`C:\Elaine\Accountg\Statistic` is the pathname.

## Creating New Subdirectories

Create subdirectories by using the `Make Dir` portion of P.A.M.'s File Manager, explained in the P.A.M. chapter. The new directory you create will become a subdirectory of the directory you are in when you issue the command. (See the chapter on P.A.M..)

## Removing Subdirectories

Remove unwanted directories with the `Delete File/Dir` portion of P.A.M.'s File Manager, explained in the P.A.M. chapter. Always keep in mind that a directory can be deleted only when every one of its files has been deleted.

## Choosing Default Subdirectories

You can choose a default directory from any HP application. Use File Manager from the application, and pass a directory back to the application. This directory becomes the default.

---

### NOTE

For an explanation of default directories, see the chapter on `Using Your Equipment`.

---

## Using HP 120 or 125 Files

Convert HP 120 or 125 data files to HP 150 format by using the `Copy/Backup` program discussed in the `Discs` chapter.

# How Do I Know When P.A.M. Is Ready

When P.A.M. is ready to use, the P.A.M. screen appears with the names of all installed application programs in your disc drives:

Personal Applications Manager (P.A.M.) Main  
Select an application to run and press Start Applic.

Hewlett-Packard		06/21/83	
-----------------	--	----------	--

↓

FORMAT A	INSTALL A	COPY/BACKUP A	SET UP P.A.M. A
-------------	--------------	------------------	--------------------

Start Applic   Set Date and Time   Reread Discs   3 1   File Manager   Terminal   Help

17:04

## NOTE

If your screen is full of application programs and the message **Press Next/Prev to see more applications** is at the bottom of the screen, use the keyboard keys  and  to see additional pages of application names.

On the other hand, if no application programs are on your screen, be sure that discs are in the drives and the drives are turned on. You may need to install the applications according to the directions in the Applications chapter.

# How Do I Tell P.A.M. What To Do?

## Starting an Application Program

P.A.M. assumes you want to run application programs, so it lists every installed application it can find on available discs. Touch the name of the application you want to use, then touch **Start Applic**; as you remove your finger from the screen, the program is brought into memory and started.

(If you add another disc or turn one off, you can touch **Reread Discs** for a new list.)

---

### NOTE

Discs are searched in order from drive A to B, to C, etc.

---

If, for some reason, you don't want to touch the screen, you can move the arrow without touching the screen. Press the tab key\* on the keyboard until the arrow is on the application you want; then, press **Select** on the keyboard. The result is the same as if you had touched the screen. Now you are ready to run it by touching **Start Applic**.

## Setting the Date and Time on the Clock

The HP 150 keeps track of the time and date (even if turned off), and shows them on the screen. If the time or date is wrong, you can reset it by following these steps:

Touch the words **Set Date and Time** on the bottom of the screen.

Touch **Cancel** to return to the main screen of P.A.M.

The current date is displayed on the prompt line. You are asked to type a new date, then press **Return**. Type using the format mm/dd/yyyy. If the date that was displayed is correct, just press **Return**.

\* The cursor control keys also move the arrow.

The current time is then displayed and you are asked to type the correct time, then press **Return**. Type using the format hh:mm on a 24 hour clock. If the time is correct, press **Return**.

You are automatically returned to the main menu of P.A.M. after pressing **Return** the second time.

## Listing Available Application programs

P.A.M. assumes you want to see your application programs, so it lists them automatically. All discs are checked when P.A.M. is started; if a disc is turned off at that time, the application programs on it won't appear. Later, if you turn on another disc or switch flexible discs in a drive, touch **Reread Discs** to make P.A.M. check all of the discs again. Application programs on the discs are redisplayed.

## Help

Touch **Help** on the screen to see a brief description of P.A.M.

Touch **Exit Help** to return to the main screen.

## Using the HP 150 as a Terminal

To act as a terminal, the HP 150 has three requirements:

- 1) The host computer (e.g., HP 3000) must know the terminal is there.
- 2) A cable must connect the terminal to the host computer.
- 3) **The HP 150 must be told to stop being a computer and act as a terminal.**

See the *HP 150 Terminal User's Guide* for more details about using the HP 150 as a terminal.

The third requirement above can be accomplished by touching **Terminal** on the P.A.M. screen. (To operate solely as a terminal, use the Power-on entry in the Global Configuration Menu, Appendix A.) When you wish to return to P.A.M. from the terminal, press **Shift** **Stop**.



# File Manager

The File Manager was created by Hewlett-Packard to use the touch screen feature of the HP 150 to perform the most commonly used MS-DOS functions. These MS-DOS functions can be performed by the File Manager without your memorizing any special words. You tell File Manager what you want to do, and it asks you for any pertinent information that is needed. Many times, your choices are listed on the screen; you pick one by touching one of the choices.

File Manager starts when you touch **File Manager** on the P.A.M. screen. File Manager stops when you touch **Exit FILE MGR.**

Many times, you touch the screen to perform tasks. Occasionally, you type names; all typed characters appear on line 3 until you press **Return**. Make any changes you want to the words on line 3 (by backspacing and typing) before you press **Return**.

The Series 100 File Manager allows you to:

- List files in a directory
- Print a file or directory
- Delete a file or directory from a disc
- Make a new directory on a disc
- "Browse" through the contents of a file
- Make a copy of a file on a disc
- Rename a file on a disc

## Listing Files in a Directory

For an explanation of directories, see the chapter on Files.

Start the File Manager by touching **File Manager** on the P.A.M. screen. File Manager appears:

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### NOTE

To see more information about the files in this directory or to see a completely new directory, look under Choosing Another Directory in this chapter.

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## Chapter 5

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# P.A.M. — THE PERSONAL APPLICATIONS MANAGER

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In the beginning, computers were large and complicated. They only “understood” a few key combinations of letters and symbols, and the people who used the computer had to memorize these combinations. Today, computers are smaller and can “understand” people much better than before. Programs, such as P.A.M., have been written to translate the unfamiliar letters and symbols into actions you are familiar with. For example, computer programs are “run.” Formerly, to use a program you typed the word run, maybe some quotation marks, the program name, and then you pressed . With P.A.M., you simply touch the name of the program on the screen, then **Start Applid.** P.A.M. “runs” it. P.A.M. is provided, quite simply, so that you don’t have to memorize a lot of computerese.

## What Is P.A.M.?

You may have heard the term “shell”; if you have, P.A.M. is a shell that you use instead of typing MS-DOS commands.

Another way to describe P.A.M. is that it is a translator and coordinator. Instead of translating German to English, P.A.M. translates your touching the screen to a series of computer instructions. P.A.M. also coordinates your use of application programs and disc applications.

# What Can P.A.M. Do?

The things P.A.M. can do are:

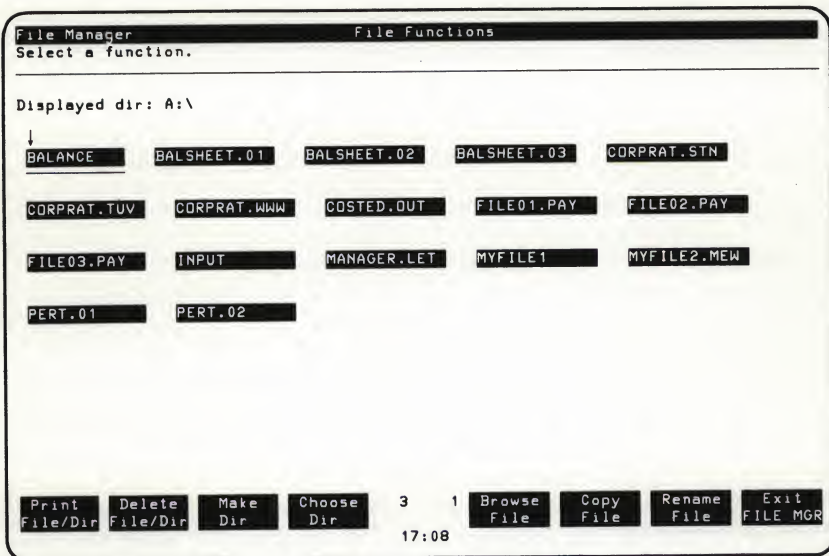
- Start an application program
- Set the date and time in the HP 150 clock
- List all installed application programs, on available discs
- Start the File Manager
- Help you by giving some simple explanations
- Make your HP 150 act like a terminal

## How Do I Find P.A.M.?

P.A.M. appears on your screen automatically.\* Every time you start the operating system (see Chapter 3), P.A.M. is loaded into the computer and appears on your screen. You turn on your disc drive, insert the proper disc, turn on the computer, and simply wait a few seconds.

If you are already using an application, you can always get to P.A.M. by exiting that application. As soon as you leave it, P.A.M. returns to the screen.

*\* If someone has set the Autostart (see the application programs chapter) on your computer, P.A.M. will not automatically appear. You see the application (or MSDOS command prompt) named in Autostart*



The File Manager automatically lists subdirectories first (underlined and alphabetized), then files (alphabetized) in the current directory.\* Think of a directory as a telephone directory; each area has its own listings. In this case, you are looking at the local directory, but if you wish, others are available.

\* If you press **Tab**, the arrow moves to the next file, even if it's on the following page. Press **Shift Tab** to move backwards. (Cursor keys also work.)

If a directory is very long, it may be continued in memory. Use **Next** and **Prev** to see the next and previous pages of file names. \*

## Printing a File or Directory

File Manager prints a file in one long page. Therefore, use it with continuous feed paper, not sheets of paper. If you want to change the margins of the file, or use single sheets, etc., use either MemoMaker or Wordstar.

From P.A.M., touch **File Manager**.

Then, touch **Print File/Dir**:

File Manager				File Functions			
Select a function.							
Displayed dir: A:\							
↓							
BALANCE	BALSHEET.01	BALSHEET.02	BALSHEET.03	CORPRAT.STN			
CORPRAT.TUV	CORPRAT.WWW	COSTED.OUT	FILE01.PAY	FILE02.PAY			
FILE03.PAY	INPUT	MANAGER.LET	MYFILE1	MYFILE2.MEW			
PERT.01	PERT.02						
Print File/Dir	Delete File/Dir	Make Dir	Choose Dir	3	1	Browse File	Copy File
						Rename File	Exit FILE MGR
17:11							

This screen appears:

File Manager				Print			
Select or type the file or directory to print.							
Print file:							
Displayed dir: A:\							
↓							
BALANCE	BALSHEET.01	BALSHEET.02	BALSHEET.03	CORPRAT.STN			
CORPRAT.TUV	CORPRAT.WWW	COSTED.OUT	FILE01.PAY	FILE02.PAY			
FILE03.PAY	INPUT	MANAGER.LET	MYFILE1	MYFILE2.MEW			
PERT.01	PERT.02						
Start Print	Expanded Dir	Set Printer	Choose Dir	3	1	Start Over	Exit Print
17:39							



If you want to print all file names with available information about each file, touch **Expanded Dir**. Expanded directory entries look like this:

filename	size in bytes	date of last change	time of last change
Finance.Exe	30256	10-1-83	09:17a
Blackjak.Exe	58	10-5-83	01:40p
Mary	1000	10-1-83	10:10a

If you want to look at another directory, touch **Choose Dir**.

Touch the name of the file or directory you want printed. (You can also type the name and press **Return**.) The full name (drive:\path\file name)\* appears after Print file:

File Manager

Print

Press Start Print if information is correct.

Print file: A:\MYFILE1

Displayed dir: A:\

BALANCE	BALSHEET.01	BALSHEET.02	BALSHEET.03	CORPRAT.STN
CORPRAT.TUV	CORPRAT.WWW	COSTED.OUT	FILE01.PAY	FILE02.PAY
FILE03.PAY	INPUT	MANAGER.LET	MYFILE1	MYFILE2.MEW
PERT.01	PERT.02			

Start Print

Expanded Dir

Set Printer

Choose Dir

3 1

Start Over

Exit Print

17:40

Notice that the file name you chose is highlighted, and that the name appears after Print file:

If you change your mind about which file to print, touch **Start Over** or touch another file name.

If you have more than one printer, touch **Set Printer** to choose which printer to use. This screen appears:

\* Note the use of backslash, not forward slash.



File Manager		Set Printer	
Select a printer.			
Print file: A:\MYFILE1			
Displayed dir: A:\			
BALANCE	BALSHEET.01	BALSHEET.02	BALSHEET.03
CORPRAT.STN			
CORPRAT.TUV	CORPRAT.WWW	COSTED.OUT	FILE01.PAY
FILE02.PAY			
FILE03.PAY	INPUT	MANAGER.LET	MYFILE1
MYFILE2.MEW			
PERT.01	PERT.02		
AUX: 3 1		PRN: *	LST:
Exit Set Prtr		17:41	

If you have only one printer, it has probably been named PRN; that is why there is an asterisk in that label. A second printer would probably be named LST. If you want to use that printer, touch **LST:**; an asterisk then appears in LST. AUX can also be a printer. (Look at your MS-DOS configuration for more information.) Touch **Exit Set Prtr**.

Touch **Start Print** to start printing:

File Manager		Print	
Press Start Print if information is correct.			
Print file: A:\MYFILE1			
Displayed dir: A:\			
BALANCE	BALSHEET.01	BALSHEET.02	BALSHEET.03
CORPRAT.STN			
CORPRAT.TUV	CORPRAT.WWW	COSTED.OUT	FILE01.PAY
FILE02.PAY			
FILE03.PAY	INPUT	MANAGER.LET	MYFILE1
MYFILE2.MEW			
PERT.01	PERT.02		
Start Print	Expanded Dir	Set Printer	Choose Dir
3 1		Start Over	Exit Print
17:43			

While printing, the message "Printing the selected file (or directory)." appears at the top of the screen along with the label **Stop Print** in the lower right corner. Touch **Stop Print** to stop printing and return to the first print screen.

When printing is complete, you are returned to the first print screen. If you don't want to print another file, touch **Exit Print**.

## Deleting a File or Directory

This command allows you to delete either files or directories. A directory, however, can only be deleted when all of the files in it have been deleted.

Touch **File Manager** on the P.A.M. screen.

Touch **Delete File/Dir**; this screen appears:

File Manager

Delete

Select or type a file or directory to delete.

Delete file:

Displayed dir: A:\

↓

BALANCE

CORPRAT.TUV

FILE03.PAY

PERT.01

BALSHEET.01

CORPRAT.WWW

INPUT

PERT.02

BALSHEET.02

COSTED.OUT

MANAGER.LET

BALSHEET.03

FILE01.PAY

MYFILE1

CORPRAT.STN

FILE02.PAY

MYFILE2.MEW

Start Delete

Choose Dir

3

1

Start Over

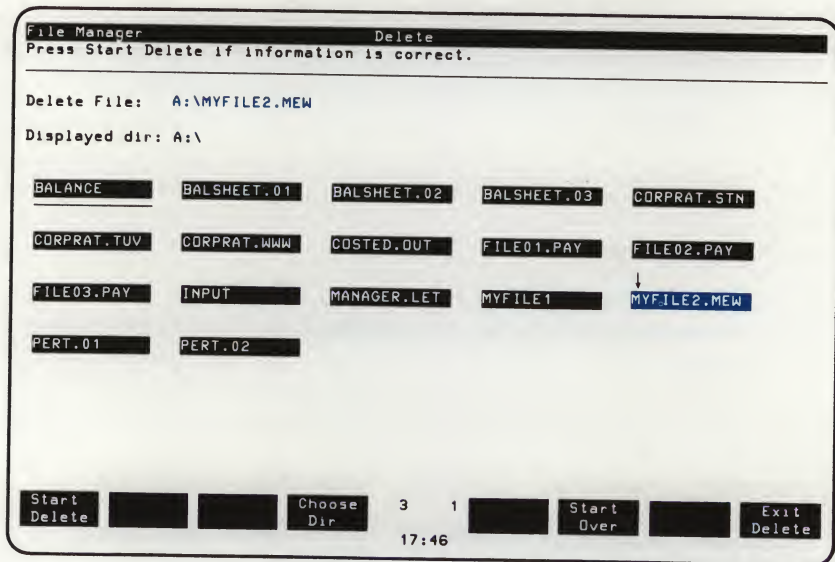
Exit Delete

17:45

(If you want to look at another directory, touch **Choose Dir.**)

Remember that you must delete all files (one at a time) in a directory before deleting the directory itself.

Touch one file or directory name on the screen. (If you touch a second file, the first one is "unselected.") The full name (drive:\path\file name) appears after Delete file:



Note that the file you touched is highlighted; you can touch it again (or touch another file) to "unselect" it. The highlighted file will be deleted.

If you change your mind about which file to delete, touch **Start Over**, then touch a new file name. If you need to switch directories, touch **Choose Dir**.

Touch **Start Delete**.

When the deletion is complete, the list of files reappears. Note that the deleted file or directory no longer appears on the screen. Touch **Exit Delete**.

## Making a New Directory

From P.A.M., touch **File Manager**, then **Make Dir**:

File Manager		File Functions					
Select a function.							
Displayed dir: A:\							
↓							
BALANCE	BALSHEET.01	BALSHEET.02	BALSHEET.03	CORPRAT.STN			
CORPRAT.TUV	CORPRAT.WWW	COSTED.OUT	FILE01.PAY	FILE02.PAY			
FILE03.PAY	INPUT	MANAGER.LET	MYFILE1	MYFILE2.MEW			
PERT.01	PERT.02						
Print File/Dir	Delete File/Dir	Make Dir	Choose Dir	3 1 Browse File	Copy File	Rename File	Exit FILE MGR
17:48							

Type the new directory name; the full name (drive:\path\directory name) appears on the screen:

File Manager		Make Directory					
Type the new directory name.							
A:\USER\							
Dir to Make:							
Displayed dir: A:\							
↓							
BALANCE	BALSHEET.01	BALSHEET.02	BALSHEET.03	CORPRAT.STN			
CORPRAT.TUV	CORPRAT.WWW	COSTED.OUT	FILE01.PAY	FILE02.PAY			
FILE03.PAY	INPUT	MANAGER.LET	MYFILE1	MYFILE2.MEW			
PERT.01	PERT.02						
Start Make Dir		Choose Dir	3 7	Start Over	Exit Make Dir		
17:52							



Press .

Touch  The new directory will become a subdirectory of the one on the screen unless you specify otherwise. (If you indicate another directory (e.g., B:\USER\MARY\FILENAME), the file becomes part of the indicated directory. Touch :

File Manager

Make Directory

Press Start Make Dir if information is correct.

Dir to Make: A:\USER\  
Displayed dir: A:\  
↓

BALANCE

BALSHEET.01

BALSHEET.02

BALSHEET.03

CORPRAT.STN

CORPRAT.TUV

CORPRAT.WWW

COSTED.OUT

FILE01.PAY

FILE02.PAY

FILE03.PAY

INPUT

MANAGER.LET

MYFILE1

MYFILE2.MEW

PERT.01

PERT.02

Start  
Make Dir

Choose  
Dir

3

7

Start  
Over

Exit  
Make Dir

17:53

While the directory is being created, the message "Making the directory." appears on the screen.

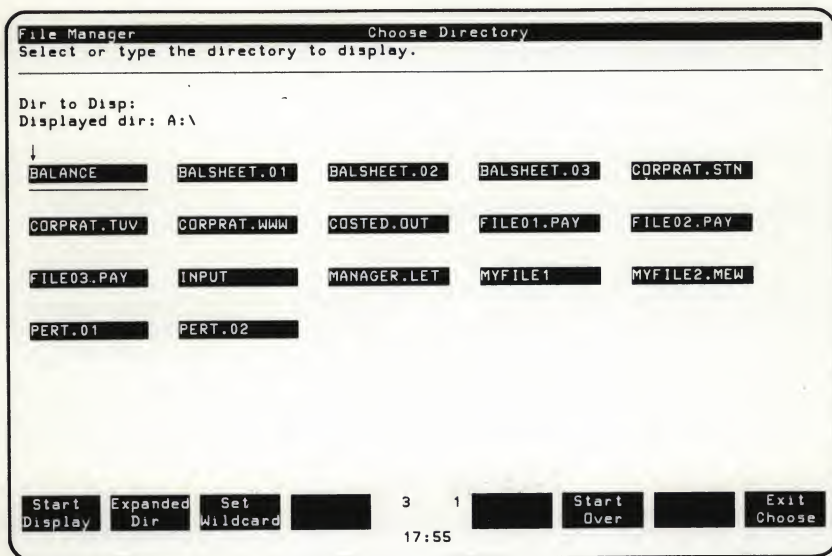
The new directory name appears on the screen if it's part of this directory.

If you don't want to create another directory, touch .



## Choosing Another Directory

The File Manager allows you to choose and list a new directory. Any time that you want to see a file that is not already on the screen, touch **Choose Dir**. This screen appears:



All of the files found in the current directory are listed on the above menu. This includes all subdirectories found in the current directory. (See the discussion on subdirectories earlier in this chapter. Also included in subdirectories is the entry "...". The entry ".." means "the parent of this directory." If you are at the root directory, "." does not appear because the root directory has no parent.)

If you want to see a directory that lists all file information, touch **Expanded Dir**. An expanded directory looks like this:

---

### NOTE

If a directory is over 200 files long the label **Get More Files** appears on the screen. Press **Get More Files** to see other pages of files.

---

File Manager

Choose Directory

Select or type the directory to display.

Dir to Disp:

Displayed dir: A:\

BALANCE

<DIR>

Remaining Bytes: 20001

BALSHEET.01

58

06-16-03

06:40p

BALSHEET.02

4096

06-21-03

09:17a

BALSHEET.03

58

06-21-03

09:17a

CORPRAT.STN

0

06-21-03

05:58p

Start Display

Expanded Dir \*

Set Wildcard

Press Next/Prev to see more files.

3

1

Start Over

Exit Choose

18:00

If you do not wish to see all of the files in the directory touch **Set Wildcard** to indicate which files you want to see. You can type one name or you can use a \* as a "wildcard" to stand for any letters. For example if your files were named:

- letter
- Finance
- File1
- File1.bak
- File2

The wildcard Fil\* would find File1 and File2. F\* would find Finance, File1, and File2. F\*.\* would find Finance, File1, File1.bak, and File2.

(You can also use ? in place of any one letter, such as Memo? for Memo1, Memo2, and Memo3.)

After pressing **Set Wildcard**, the current wildcard appears on line 3. Modify it by using **Backspace** or **Clear Line** and typing characters.

To remove a wildcard, touch **Set Wildcard** then **Clear Line** and **Return**. This clears the wildcard from line 3.

If you want to see a directory that is not listed on the screen, type its full pathname (e.g., \User\Mary) in response to "Select the directory to display."

If you are completely lost as to what directory you are in, type the drive letter, a colon, and a backslash (e.g. A:\) - this takes you back to the root.

A \ tells the HP 150 "move to the root directory." There you can figure out where you want to be.

Touch the name of the directory on the screen; it is highlighted. (To unselect it, touch it again.)

Touch **Start Display**.

File Manager Choose Directory  
Press Start Display if information is correct.

---

Dir to Disp:  
Displayed dir: A:\

BALANCE	<DIR>	Remaining Bytes: 20001
BALSHEET.01	58 06-16-03 06:40p	
BALSHEET.02	4096 06-21-03 09:17a	
BALSHEET.03	58 06-21-03 09:17a	
CORPRAT.STN	0 06-21-03 05:58p	

Start Display Expanded Dir \* Set Wildcard Press Next/Prev to see more files. 3 1 Start Over Exit Choose

18:00

All of the files (unless a wildcard has been set) found in the current directory are listed on the screen. This includes all subdirectories found in the current directory. (See the discussion on subdirectories earlier in this chapter.)

Touch **Exit Choose**.

## NOTE

You may see a directory other than the root when you enter File Manager if you changed the default with the CHDIR command from the MS-DOS command processor or changed the default from an application program.

## Browsing a File

Touch **File Manager** on the P.A.M. screen.

Then, touch **Browse File**:

File Manager

File Functions

Select a function.

Displayed dir: A:\

↓

USER

BALSHEET.01

BALSHEET.02

BALSHEET.03

CORPRAT.STN

CORPRAT.TUV

CORPRAT.WWW

COSTED.OUT

FILE01.PAY

FILE02.PAY

FILE03.PAY

INPUT

MANAGER.LET

MYFILE1

MYFILE2.MEW

PERT.01

PERT.02

Print  
File/Dir

Delete  
File/Dir

Make  
Dir

Choose  
Dir

3

1

Browse  
File

Copy  
File

Rename  
File

Exit  
FILE MGR

18:02



If you want to look at another directory, touch **Choose Dir.**

Touch the name of the file you want to look at; the full name (drive:\path\file name) appears on the screen after Browse file:

File Manager Browse

Press Start Browse if information is correct.

Browse file: A:\PERT.01  
Displayed dir: A:\

USER	BALSHEET.01	BALSHEET.02	BALSHEET.03	CORPRAT.STN
CORPRAT.TUV	CORPRAT.WWW	COSTED.OUT	FILE01.PAY	FILE02.PAY
FILE03.PAY	INPUT	MANAGER.LET	MYFILE1	MYFILE2.MEW
↓ PERT.01	PERT.02			

Start Browse Choose Dir 3 1 Start Over Exit Browse

18:03

If you change your mind about which file you want to look at, touch **Start Over** (or touch the file name again to “unselect” it).

Touch **Start Browse.**

While File Manager looks for the file, the message “Looking for the file to browse.” appears at the top of the screen.

The actual file now appears on the screen. Touch **Next Page** or **Next Half Page** to see following pages of the file; touch **Prev Page** or **Prev Half Page** to see previous pages (home up and down work too). The file appears exactly as it was stored, not exactly as it looks when an application displays it. When you are finished, touch **Stop Browse.** If you don’t want to look at another file, touch **Exit Browse.**



## Copying a File

From P.A.M., touch **File Manager**.

Touch **Copy File**:

File Manager

File Functions

Select a function.

Displayed dir: A:\

↓

USER

BALSHEET.01

BALSHEET.02

BALSHEET.03

CORPRAT.STN

CORPRAT.TUV

CORPRAT.WWW

COSTED.OUT.

FILE01.PAY%

FILE02.PAY

FILE03.PAY

INPUT

MANAGER.LET

MYFILE1

MYFILE2.MEW

PERT.01

PERT.02

Print  
File/Dir

Delete  
File/Dir

Make  
Dir

Choose  
Dir

3

1

Browse  
File

Copy  
File

Rename  
File

Exit  
FILE MGR

18:04

If you want to look at another directory, touch **Choose Dir**.

Touch the name of the file to be copied; the name appears after Copy file: on the screen.

File Manager

Copy

Select or type the file to copy to.

Copy file:

A\MYFILE1

To file:

Displayed dir: A:\

USER	BALSHEET.01	BALSHEET.02	BALSHEET.03	CORPRAT.STN
CORPRAT.TUV	CORPRAT.WWW	COSTED.OUT	FILE01.PAY	FILE02.PAY
FILE03.PAY	INPUT	MANAGER.LET	↓ MYFILE1	MYFILE2.MEW
PERT.01	PERT.02			

Start Copy

Choose Dir

3

1

Start Over

Exit Copy

18:05

If you decide on another file, press **Start Over**; the file is “unselected.” After you choose the file, you are asked to name the new copy.

You probably want to choose a new name for the new copy; type a valid file name (see the discussion on files earlier in this chapter) and press **Return**. If you want to copy over an existing file, touch that file name on the screen.

If the file copy is to go to another disc, type the full pathname (e.g., C:\Mary\file name or C:\file name) which is the disc, directory, and file name.

The full pathname always appears. If you omit them, the displayed default drive and directory are used with the file name.

File Manager

Copy

Press Start Copy if information is correct.

Copy file:

A:\MYFILE1

To file:

A:\NEWONE

Displayed dir:

A:\

USER

BALSHEET.01

BALSHEET.02

BALSHEET.03

CORPRAT.STN

CORPRAT.TUV

CORPRAT.WWW

COSTED.OUT

FILE01.PAY

FILE02.PAY

FILE03.PAY

INPUT

MANAGER.LET

↓  
MYFILE1

MYFILE2.MEW

PERT.01

PERT.02

Start Copy

Choose Dir

3

1

Start Over

Exit Copy

18:08

If you change your mind about the files, press **Start Over**.

Press **Start Copy** and wait for the copy to take place.

The message “**Copying the file.**” appears at the top of the screen, and the label **Stop Copy** is in the lower right of the screen.

If you want to stop, press **Stop Copy**; files remain as they were before the copy began.

Press **Exit Copy** if you don't want to copy any more files.

# Renaming a File

From P.A.M., touch **File Manager**.

Then, touch **Rename File**:

File Manager

File Functions

Select a function.

Displayed dir: A:\

↓

USER

BALSHEET.01

BALSHEET.02

BALSHEET.03

CORPRAT.STN

CORPRAT.TUV

CORPRAT.WWW

COSTED.OUT

FILE01.PAY

FILE02.PAY

FILE03.PAY

INPUT

MANAGER.LET

MYFILE1

MYFILE2.MEW

PERT.01

PERT.02

Print  
File/Dir

Delete  
File/Dir

Make  
Dir

Choose  
Dir

3

1

Browse  
File

Copy  
File

Rename  
File

Exit  
FILE MGR

18:09

If you want to look at another directory, touch **Choose Dir**.

Touch the file name to be renamed:

File Manager Rename  
Select or type the file to rename.

---

Rename file:  
To file:

Displayed dir: A:\

↓

USER	BALSHEET.01	BALSHEET.02	BALSHEET.03	CORPRAT.STN
CORPRAT.TUV	CORPRAT.WWW	COSTED.OUT	FILE01.PAY	FILE02.PAY
FILE03.PAY	INPUT	MANAGER.LET	MYFILE1	MYFILE2.MEW
PERT.01	PERT.02			

Start Rename Choose Dir 3 1 Start Over Exit Rename  
18:09

The old file name (drive:\path\file name) is now on the screen next to Rename file:. Type the new name:

File Manager Rename  
Select or type the file to rename to.  
WANDA'S

---

Rename file: A:\PERT.02  
To file:

Displayed dir: A:\

↓

USER	BALSHEET.01	BALSHEET.02	BALSHEET.03	CORPRAT.STN
CORPRAT.TUV	CORPRAT.WWW	COSTED.OUT	FILE01.PAY	FILE02.PAY
FILE03.PAY	INPUT	MANAGER.LET	MYFILE1	MYFILE2.MEW
PERT.01	PERT.02			

Start Rename Choose Dir 3 8 Start Over Exit Rename  
18:10



Press **Return**.

If you change your mind, touch **Start Over**.

Touch **Start Rename**.

When the rename is complete, the directory list reappears with the new name:

File Manager

Rename

Select or type the file to rename.

Rename file:

Displayed dir: A:\

↓

USER

BALSHEET.01

BALSHEET.02

BALSHEET.03

CORPRAT.STN

CORPRAT.TUV

CORPRAT.WWW

COSTED.OUT

FILE01.PAY

FILE02.PAY

FILE03.PAY

INPUT

MANAGER.LET

MYFILE1

MYFILE2.MEW

PERT.01

WANDA'S

Choose Dir

3

8

Start Rename

Start Over

Exit FILE MGR

18:10

Touch **Exit Rename** if you don't wish to rename another file.



---

## Chapter 6

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---

# APPLICATIONS

---

You can either buy computer programs or you can write your own. If you buy a program, it has probably been designed to generically cover certain situations such as accounting, word processing, or graphic charting. These purchased programs are called application programs because they are designed for a specific area or application.

Application programs purchased from Hewlett-Packard are sent to you on flexible discs. On the flexible disc label, you can see the word "master".

VISICALC  
Visi\_Master

MEMOMAKER  
Memo\_Master

PIE CHART  
Pie\_Master

BAR CHART  
Bar\_Master

You can use your master discs from Hewlett-Packard just as they are shipped to you. However, we recommend that you format another disc, and install the application program onto the new disc. Then, keep the HP master disc in a safe place. This way, you can always create another copy (from the master only) if something happens to the first one. Also, if you ever purchase an updated version of the O.S. or an application, you must send in the master.

Application programs are always installed; they cannot be copied.

---

### NOTE

If you want to type MS-DOS commands from a disc, you must first install MS-DOS COMANDS onto that disc. (The program is shipped on the operating system disc, Sys\_Master.)

---

## Installing Application Programs

Use the INSTALL program to install application programs. INSTALL is sent with every HP 150 on the Disc Applications Disc.

You will need:

- a formatted disc (may have the operating system on it if there's room — if your application is bigger than 200,000 bytes, don't put the operating system onto a 3½ or 5¼ disc)
- a master disc for each application program
- the INSTALL program (Disc Applications Disc)

Format a disc (with the **Copy System** option on (\*) if there will be room) if the disc is new. (You may be able to install more than one application on a disc if there's room; do not reformat the disc - you will lose the first application.)

Be sure that a copy of INSTALL is in one of your drives.

Start from the P.A.M. screen. Touch INSTALL, then **Start Applic**:

Personal Applications Manager (P.A.M.)      Main	
Select an application to run and press Start Applic.	
Hewlett-Packard	
07/07/83	
FORMAT A	INSTALL A
COPY/BACKUP A	SET UP P.A.M. A
Start Applic	Set Date and Time
Reread Discs	3 1
File Manager	Terminal
Help	
09:33	

Press **Install Applics**:

Install      Main	
Select a function below.	
Install Applics : copies applications onto a disc and installs them into P.A.M.	
Remove Applics : deletes applications from a disc and removes them from P.A.M.	
Install Applics	Remove Applics
Num Pad	1 1
Exit Main	
09:58	



This screen appears:

Install Applics		Install	
Select the correct disc(s) below. Press Show Applics.			
FROM:		TO:	
A		A	
B		B	
C		C	
D		D	
E		E	
F		F	
Reread Discs		1 1	Show Applics
Num Pad		10:00	Main Menu Exit Install

If the message [Press Next/Prev to see more discs](#) appears on your screen, you have more discs on other pages. Press [NEXT](#) to see later pages of discs. Press [PREV](#) to see earlier pages of discs.

Place the master disc into a drive. In which drive did you put the flexible master disc? Touch the letter of that drive on the screen. (If you touch a second letter in the [FROM](#): column, the first choice is cancelled. Only one can be selected from each column.)

Where do you want to put the application program? Touch the letter of a formatted disc in the [TO](#): column. If you touch a second letter in the [TO](#): column, the first choice is cancelled.

One disc in the [FROM](#): column and one disc in the [TO](#): column should be highlighted.

Install Applies
Install

Select the correct disc(s) below. Press Show Applies.

FROM:

A

B

C

D

E

F

TO:

A

B

C

D

E

F

Reread Discs

1 1

Show Applies

Main Menu

Exit Install

Num Pad 10:02

If you need to put another flexible disc in the drive or turn on another drive, do so; then, press **Reread Discs** to update the discs displayed on the screen.

When both the **FROM:** and **TO:** discs are indicated correctly, press **Show Applies** to choose the application programs you want installed. This screen appears:



If you have so many application programs that they are continued on the second page, use  and  to go forward a page of application programs and back.

Every application program name that you touch is highlighted as it is marked for installation. (To unselect it, touch the application name again.) When you have marked all the application programs you want installed, touch **Start Install**:



---

### NOTE

Error messages are listed in Appendix D.

---

The next screen lists only the application program(s) you selected.

During the installation, the application program currently being installed is shown on line 2. Once it is installed, the highlight on the name disappears.



If an application program is too large to fit on a disc, a message will inform you of this, then the previous screen is redisplayed. You could put another disc with more room into the **TO:** drive, then touch **Start Install**. Another option is to "unselect" the application that is too big and touch **Start Install** again to continue with any other application programs you may be installing.

If the same version of an application program already exists on that disc, a message informs you of this and asks if you want to overwrite the first copy.

If an application program is located on more than one master disc install one disc at a time. After the first one finishes, new labels appear at the bottom of the screen. The message "Insert the next disc of this application into drive X. Press New Disc Ready." appears. Touching **Stop Install** will remove the partially installed application. (The only two labels are those mentioned.)



---

### NOTE

Series 100/Graphics is an exception to the above instruction. In this case, Hewlett-Packard shipped you four separate programs named Pie Chart, Line Chart, Bar Chart, and Text Chart. You can install one, two, three, or all of them as you wish.

---

If more than one application has been selected, **Stop at Next** appears. Touch **Stop at Next** if you decide to stop installing application programs. The application program being installed at that time is finished, then the previous screen appears. You can then change any selected application programs and touch **Start Install** again or you could also touch **Exit Select**.

After installation is complete, touch **Exit Install** to return to P.A.M.

## Removing Application Programs from a Disc

You may decide at some time to remove an application program that you installed onto a disc. Use the INSTALL program to remove applications; INSTALL is shipped on the Disc Applications disc.

Be sure that a copy of INSTALL is in one of your disc drives. From P.A.M., touch INSTALL, then **Start Applic:**

Personal Applications Manager (P.A.M.) Main	
Select an application to run and press Start Applic.	
Hewlett-Packard	07/07/83
<div>FORMAT</div> <div>A</div>	<div>INSTALL</div> <div>A</div>
<div>COPY/BACKUP</div> <div>A</div>	<div>SET UP P.A.M.</div> <div>A</div>
<div>Start Applic</div> <div>Set Date and Time</div> <div>Reread Discs</div> <div>3 1</div> <div>File Manager</div> <div>Terminal</div> <div>Help</div>	
10.27	

Press **Remove Applics**:

Install Main	
Select a function below.	
<p>Install Applics : copies applications onto a disc and installs them into P.A.M.</p> <p>Remove Applics : deletes applications from a disc and removes them from P.A.M.</p>	
<div>Install Applics</div>	<div>Remove Applics</div> <div>Num Pad</div>
1 1	Exit Main
11:52	

You are then asked to choose a disc:

Remove Applics

Remove

Select the correct disc(s) below. Press Show Applics.

FROM:

A

B

C

D

E

F

Reread Discs

1 1

Show Applics

Main Menu

Exit Remove

Num Pad

11:53

Use Next/Prev to see more discs.

After you touch the name of the disc containing the application program(s) to be removed, press **Show Applics**. The next screen shows you all of the application programs on the chosen disc:

Remove Applics

Select

Select the applications to be removed. Press Start Remove.

Remove from disc B.

APPLICATION :VERSION

↓

FORMAT :A.01.00

MSDOS COMANDS:A.01.00

Available space on disc B: 1024 bytes

APPLICATION :VERSION

COPY/BACKUP :A.01.00

SET UP P.A.M.:A.01.00

1 1

Start Remove

Exit Select

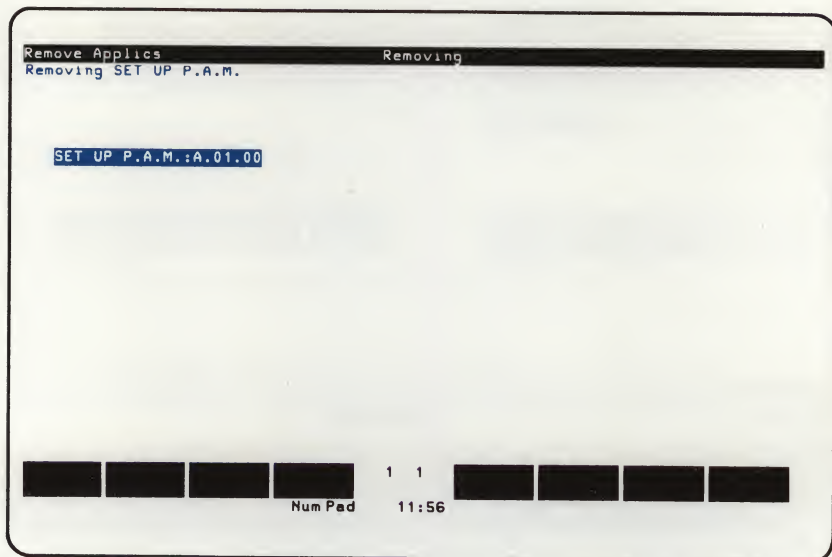
Num Pad

11:55

If you want to return to the previous screen, touch **Exit Select**.

After touching the name(s) of all application program(s) to be removed, touch **Start Remove**.

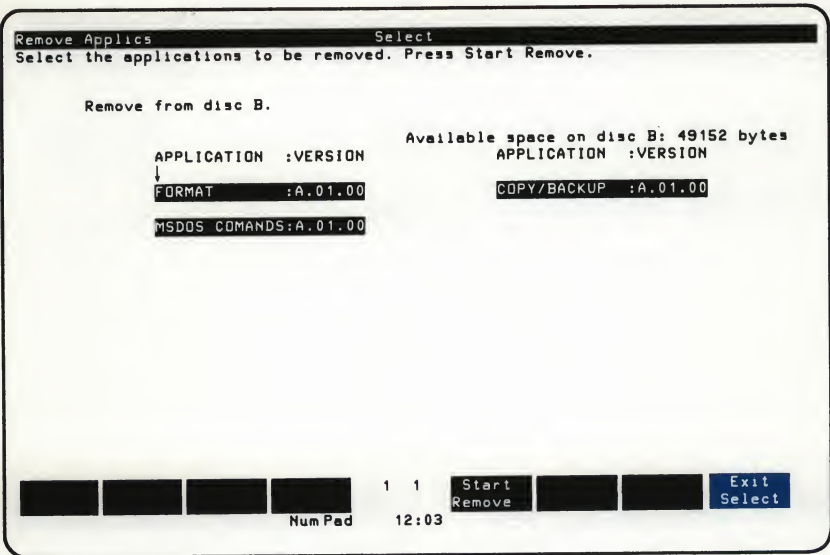
Only the applications you want to remove from the disc are now listed on the screen; each one is listed on line 2 as it is being removed. After an application is removed, the highlight on it disappears.



If more than one application has been selected, **Stop at Next** appears. Touch **Stop at Next** if you decide to stop removing application programs. The application program being removed at that time is finished, then the previous screen appears. You can then change any selected application programs and touch **Start Remove** again or you could also touch **Exit Select**.

After a file is removed it appears with no highlight on it; VISICALC indicates an application program will be removed and VISICALC indicates that it is already gone.

When all indicated application programs have been removed, the screen looks like this:

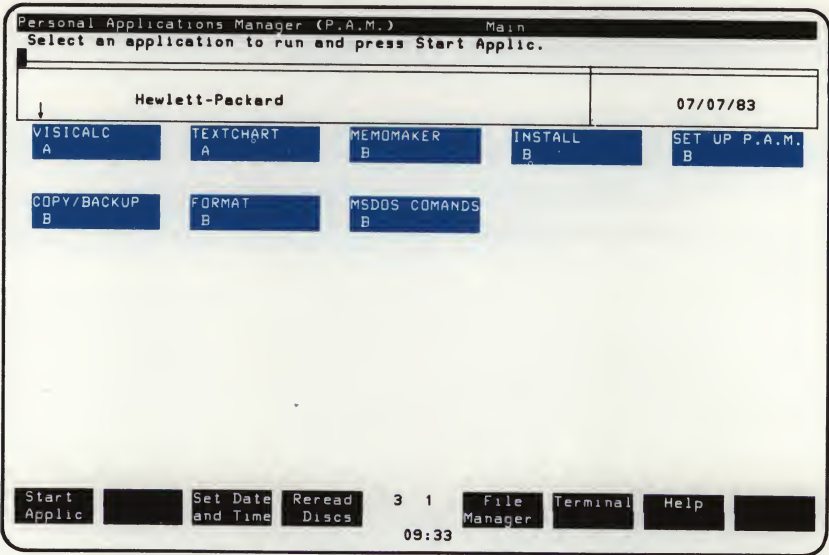




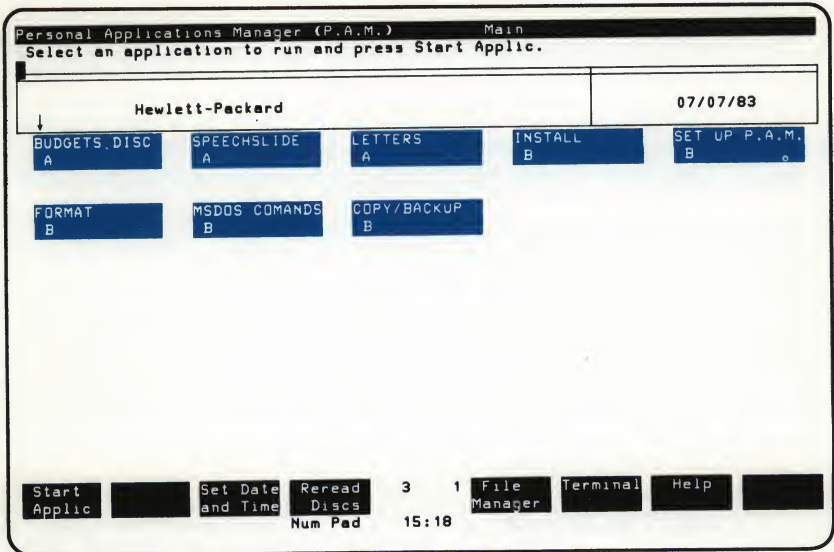
# SET UP P.A.M.

## What Does SET UP P.A.M. Do?

In P.A.M., all installed application programs appear on the screen so that you can run them by touching the name on the screen.



You could, however, change the appearance and order of the names on the screen by using the SET UP P.A.M. program. The application programs themselves wouldn't change; only the name on the screen would be different. You could make the screen above look like this, while still performing the exact same tasks:



Notice that three of the names (on the top row) have been changed, and the order of the bottom row has been changed. You could also have changed the application names on disc B, and order of the application names on disc A.

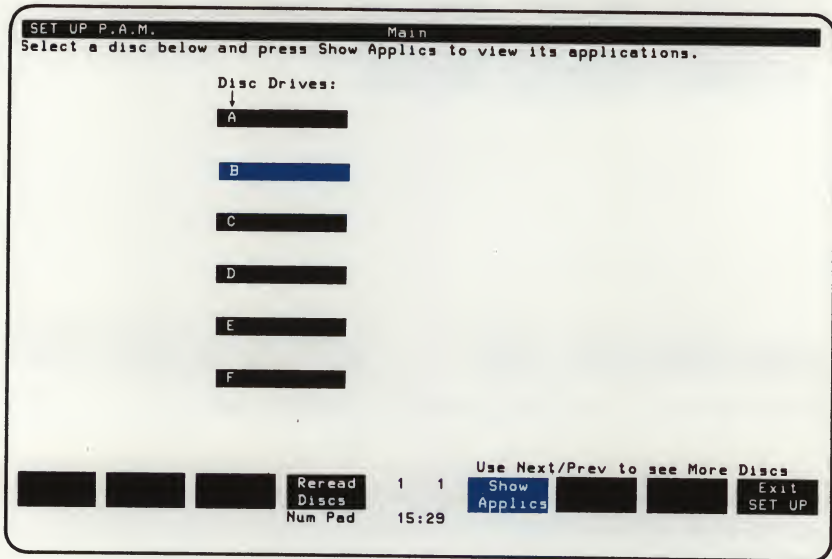
If you wish, you can also choose one application program on each disc to run automatically every time you start the operating system. If you do this, you will not see P.A.M. first; instead, the first thing you see will always be the chosen application program.

You can set an application to autostart on each one of your discs. If you marked one application program on disc A and one on disc B, the one on A would start, because discs are checked from A, B, C, etc. As soon as a marked application is found, it is started.

## How Do I Use the SET UP P.A.M. Program?

SET UP P.A.M. is shipped from Hewlett-Packard on the Disc Applications Disc. You can use it from there, or you can install it onto another disc, as you do other application programs. When P.A.M. appears, SET UP P.A.M. is one of the application program names on the screen:

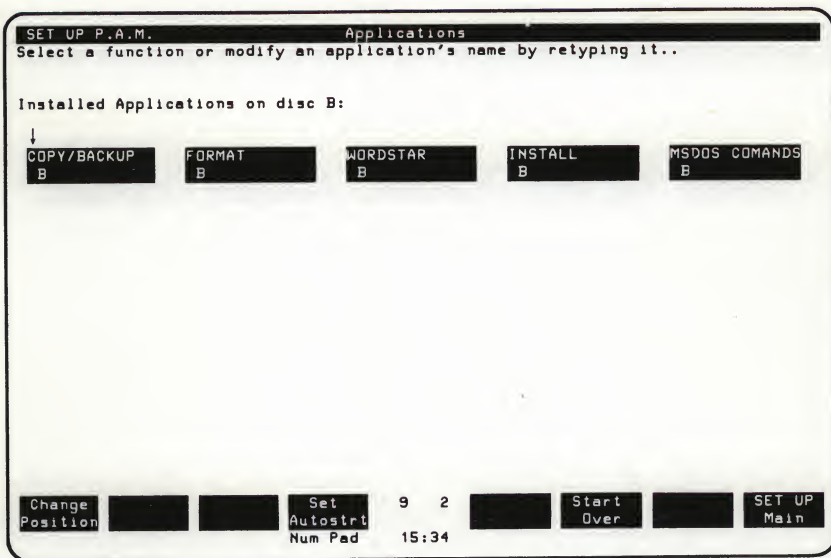
Touch SET UP P.A.M. then **Start Applic**; this appears on the screen:



If you add another disc, touch **Reread Discs** to see all available discs listed on the screen.

If you want to return to P.A.M., touch **Exit SET UP**.

Touch the name of the disc whose applications you want to alter; it is highlighted. Then, touch **Show Applica** to show all of the application program labels on that disc:



## Changing a Label

If you want to change a label that appears, touch the label, then type the new name. The new name replaces the old one as you type.

If you change your mind, you can restore labels you just changed to their original appearance by touching **Start Over** before you press **Set Autostrt**, **Change Position**, or **SET UP Main**. (Once you touch any of these the labels are saved.)

# Changing the Position of a Label

To change the position of a label on the screen, touch **Change Position**.  
This screen appears:

SET UP P.A.M.

Change Position

Select the name to be moved.

Installed Applications on disc B:

↓

COPY/BACKUP  
B

FORMAT  
B

WORDSTAR  
B

INSTALL  
B

MSDOS COMANDS  
B

9 2

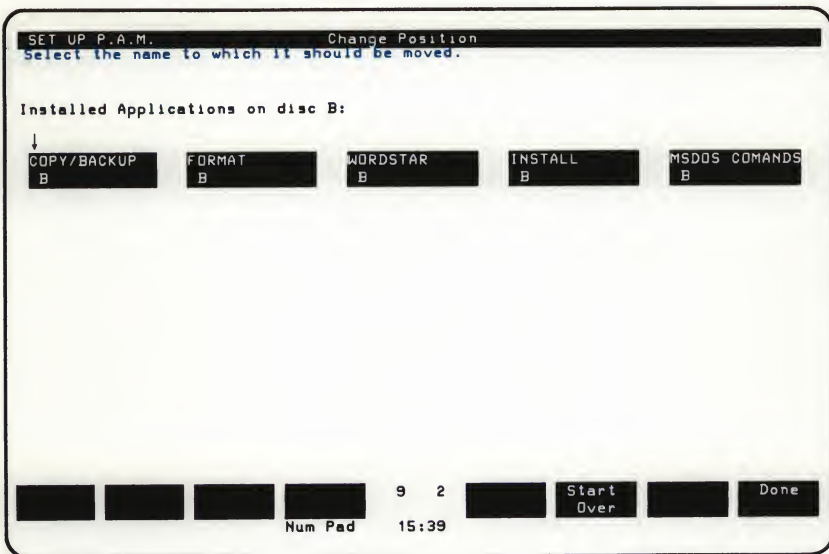
Start  
Over

Done

Num Pad 15:39



Touch the label that you want to move; it is highlighted. (If you change your mind, touch the label again to turn it off.) The message on the screen changes:

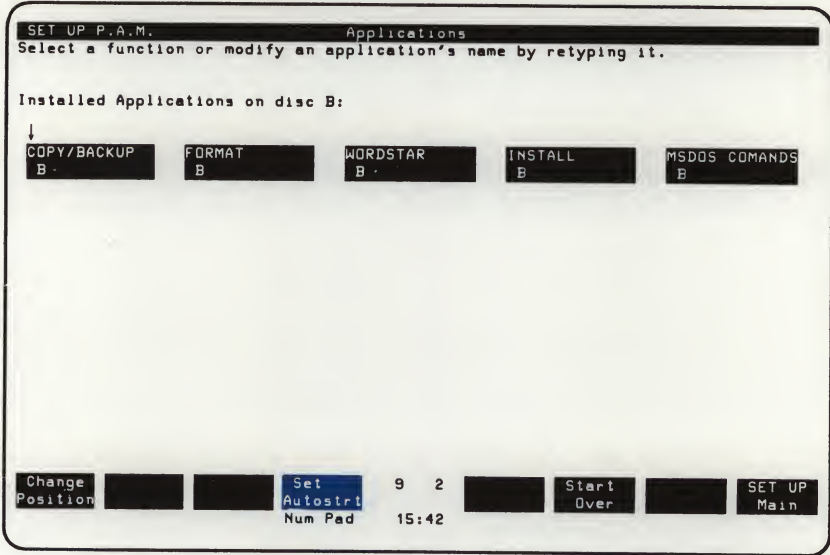


Touch the label that is in the position you want to use; as soon as you do, the highlighted label is moved there. All other labels shift one position backward or forward (depending on whether you moved the label down or up) to make room.

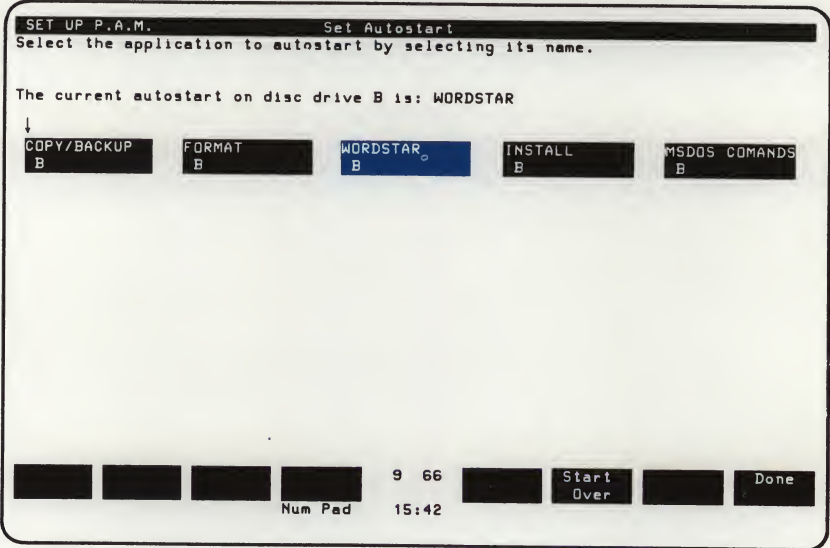
If you change your mind, touch **Start Over** to correct all moves. Press **Undo Last Move** to correct only the last change. When you are finished, press **Done**.

# Autostarting an Application

To choose an application to autostart, touch **Set Autostrt** on the screen that lists applications:



This screen appears:



If an application program is highlighted (like Wordstar in the screen above), it is currently set to automatically start; choose a new one by touching a different application name on the screen. The highlight then appears on the new application name. If you want to change back to the original state, touch **Start Over**.

Is there a highlight on the application program that you want to start automatically? If so, touch **Done** to mark that application program as the automatic first screen.

If you do NOT want any application program to start, but want to see P.A.M. instead, be sure that no highlight appears on the screen. (Touch any selected application to "unselect" it.) Then, touch **Done**.

Touch **SET UP Main** to return to the first screen. Then, touch **Exit SET UP** to return to P.A.M.

## Running Application Programs from the MS-DOS Command Prompt

MS-DOS commands are contained in a file called Command.com. This file is shipped on the operating system disc (SYS\_MASTER). It appears on SYS\_MASTER as an installed application program. (If you want to put a copy on another disc, use INSTALL.)

Be sure that SYS\_MASTER or another disc containing Command.com is in one of your drives. Touch MS-DOS Commands to get an MS-DOS command prompt. You can then type:

```
A>RUN INSTALL
A>RUN SETUP
A>RUN GRAPHICS
A>RUN VISICALC
A>RUN MEMO
A>BACKUP
A>FORMAT
A>PAM
```

(Note that the word RUN is not always used.)

Return to P.A.M. by typing EXIT and pressing **Return**.

# Installing Non-HP Applications

If you have an application for the HP 150 from a company other than Hewlett-Packard, you can install it onto P.A.M. if you want to (instead of running it from the command prompt).

Use WORDSTAR, MEMOMAKER, or EDLIN to create a file with an .IN\$ file type; be sure the .IN\$ file is on the same disc as the application.

When INSTALL finds a file such as PROG.IN\$, it recognizes that it is a .IN\$ installation file, and expects it is in this format:

Bank Prog	(P.A.M. label - max length 13 characters)
3	(Version number - max length 7 characters)
BANK.EXE	(Name of the program - max 12 characters)
	BLANK(Optional for MS-DOS command line)
765432	(Application size in bytes - all files)
file01	
file02	
file03	
file04	
	(All files used by the program - max 12 characters)

If a program uses the MS-DOS command line, the fourth line entry in the .IN\$ file lists the command line. (If not used, just press  for line 4.)

If there are multiple discs from which the application will be installed, separate the file names on each disc with an asterisk.

In the example below, the program is on three discs, and the MS-DOS command line is used:

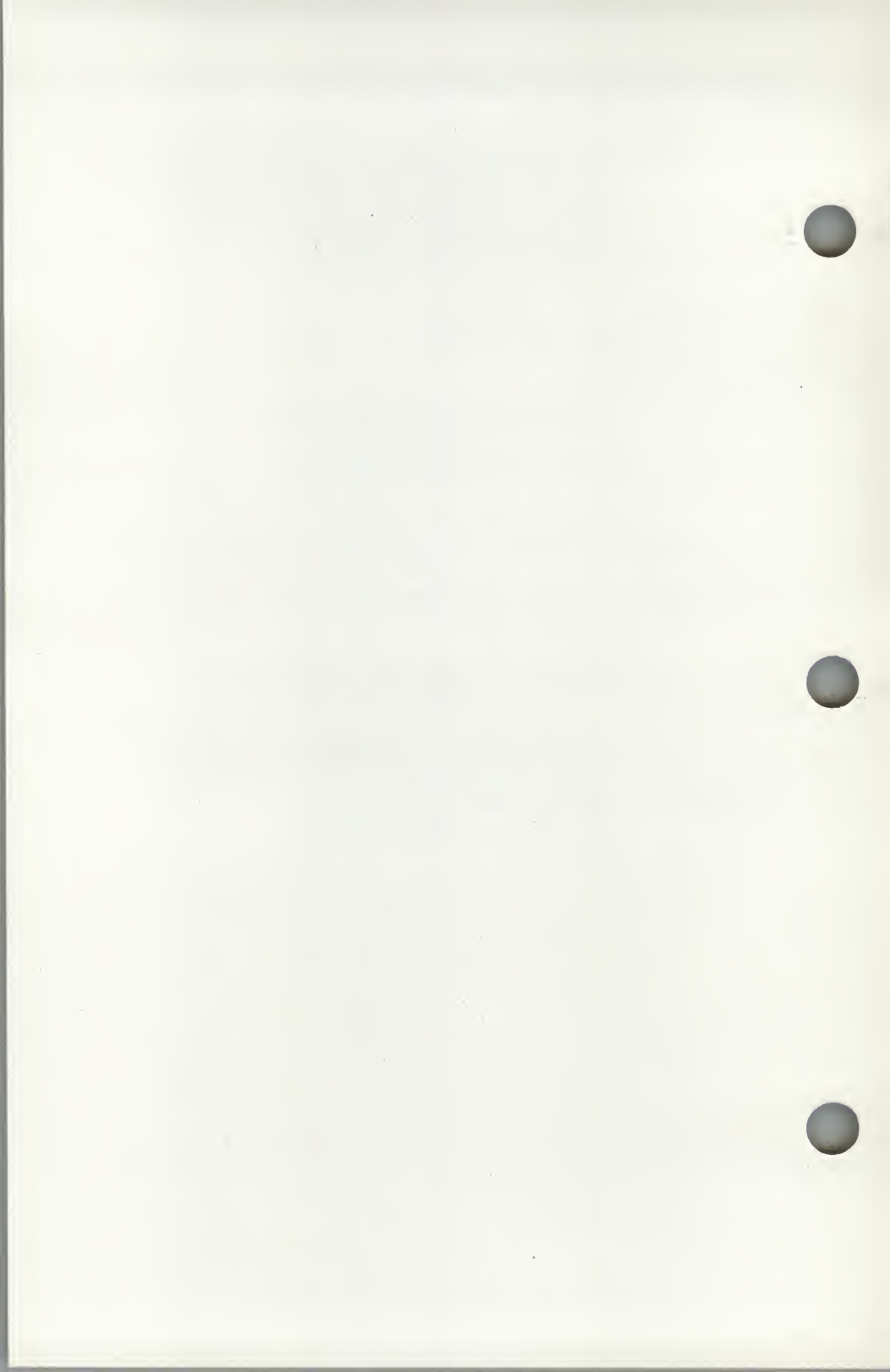
Bills Prog	(P.A.M. label - max length 13 characters)
3	(Version number - max length 7 characters)
RUN.EXE	(Name of the program - max 12 characters)
BILLS	(MS-DOS command line entry)
765432	(Application size in bytes)
file01	{ (All files on the first disc)
file02	
file03	
file04	
*	
file05	{ (All files on the second disc)
file06	
*	
file07)	(All files on the third disc)

When you create an .IN\$ file, use WORDSTAR, MEMOMAKER, or EDLIN. In WORDSTAR, be sure to create a NON-DOCUMENT. In MEMOMAKER and EDLIN, create documents as usual. Be sure to end each line by pressing .

A Basic86 program (named Hideword) would look like this:

Hideword	(P.A.M. label - max length 13 characters)
1.0	(Version number - max length 7 characters)
BASIC86.COM	(Name of the program - max 12 characters)
HIDEWORD.BAS	(MS-DOS command line entry)
51236	(Application size in bytes)
BASIC86.COM	(All files)
HIDEWORD.BAS	





---

# Chapter 7

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---

## DISCS

---

This chapter deals with discs and what you do with them. It includes how you handle discs, prepare them for use (format them), how you create a "Work Disc" with applications on it, and how you make a copy or a backup of a disc.

### Disc Handling and Care

It is usually most convenient to store flexible discs in or near the area where you work. Magnetic media such as discs require a clean, dust-free environment, similar to that of the computer. However, there are a few recommendations to keep in mind when using and storing discs (magnetic media).

---

#### NOTE

You should be aware that 3½ inch discs have a built-in limit to the number of times a disc is used. After a disc has revolved in a drive about 1.5 million times, the light on the front of the drive blinks on and off while the heads make a clicking noise. Duplicate any disc that acts this way.

If you do not duplicate a disc that indicates 1.5 million revolutions, a drive will let you continue to use this disc normally for another .5 million revolutions of the disc. After a total of 2 million revolutions, the disc is marked as worn out. You can no longer write to this disc.

---

## **Temperature and Humidity**

Since extreme humidity or temperature differences between the working and storage areas may alter the size of the media, do not expose the disc to excessive heat or sunlight (such as leaving a disc in an automobile). In addition, care should be taken when discs are moved from one area to the other. (A rapid change in temperature or humidity may result in system errors, or damage to the discs.)

If the working and storage areas cannot be kept at the same relative humidity and temperature, allow ample time (typically one hour or more) for the media to achieve a moisture and temperature balance with the system room atmosphere before using the media. The maximum rate of temperature change for the media must not exceed 20 degrees Celsius per hour.

## **Contaminants**

Airborne contaminants and particles of a certain size and hardness may scratch either the coating on the flexible disc or the disc drive head and cause premature wear on the disc, resulting in loss of information.

Some of the most common contaminants are dust, smoke, ashes, eraser crumbs, salt air, and bread crumbs. Solvent vapors, such as those from liquid spirit duplicating equipment, wet process copiers, or other volatile liquids can soften disc coatings over a period of time. To prevent excessive wear, avoid bringing these contaminants into contact with your computer (such as erasing or keeping an ashtray near a disc).

## **Magnetic Fields**

The data on magnetic media can be erased by magnetic fields. Magnetic fields are found in power generating equipment such as motors, alternators, transformers, and data processing equipment such as disc drives.

Therefore, do not place flexible discs on top of disc drives. Also, since there are magnets within a telephone receiver, do not store your flexible discs near a telephone, and do not place a telephone on top of your disc drive.

## Storage

Safeguards should be taken to protect vital data such as business records, media, or other information that is either very expensive or impossible to duplicate.

Be sure to keep the metal protector on a 3½ inch disc pushed to the right (to cover the read area) when the disc is not in use. Most 3½ inch discs do this automatically to protect the disc's surface.

Replace the disc if it becomes physically damaged (creased, folded or torn), or if the recording surface becomes contaminated by fingerprints, smoke particles, etc. Do not touch or clean the exposed disc surface.

Never attempt to clean your flexible discs. The inside surface of the disc jacket is covered with a special material that cleans the disc as it rotates. Any other method of cleaning may cause solvent damage to the media or scratch the disc, causing it to lose data.

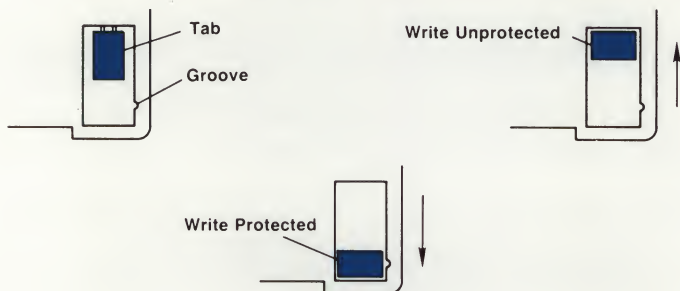
Backup files should be maintained and stored in a fireproof storage container. A regular program to update these backup files is necessary to maintain the value of such duplicate data storage.

# Write Protecting a Flexible Disc

If you want to put information on a disc, and then "seal" that disc from any changes, you can write protect the disc. This way, your files on the disc can be read, but they cannot be altered. No more files can be written on the disc until you reverse the write-protect.

Write protect the disc as follows:

- 1) Break off the write protect tab.
- 2) Align the protrusion on the tab with the slot in the disc.
- 3) Depress the tab into the groove; the tab should fit snugly.



When you want to write to the disc again, simply slide the tab to the up position in the slot.

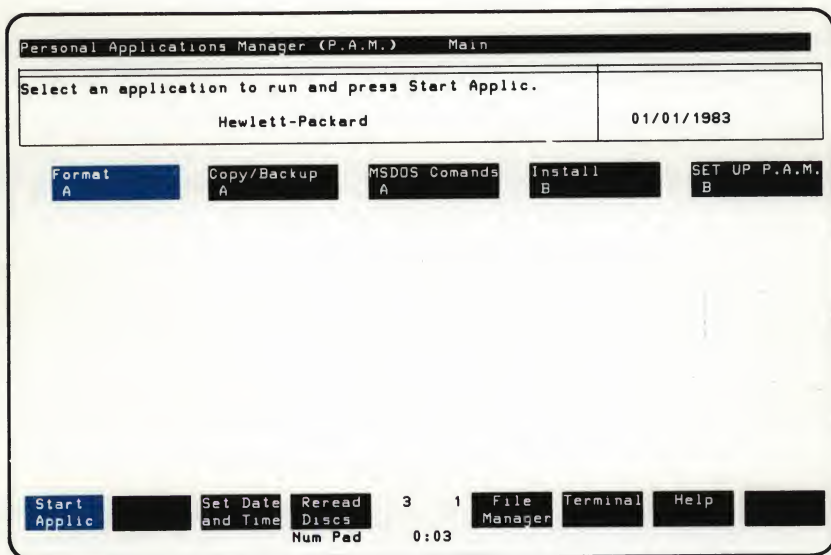


# Formatting a Disc

Before a disc can be used for the first time, it must be formatted. You received a disc with your system labeled operating system; the FORMAT program is on this disc. Use the FORMAT program to format HP discs of any size so they can run on the HP 150.

Be sure that your system processor is turned on, the operating system is loaded, and a copy of FORMAT is in drive A.

If P.A.M. is not on your screen at this time, exit any other application you may be using; this returns P.A.M. to the screen.



The label FORMAT should appear on the P.A.M. screen. (If it does not appear, be sure that the operating system disc is placed into the drive with the label facing up; be sure the drive is connected and turned on.)

Touch **FORMAT** on the screen, then **Start Apply** to start the **FORMAT** application:

FORMAT Main

Select the discs to format and press Start Format.

DISC LABEL - DISC DRIVE

- A

- B

- C

- D

- E

- F

Press Next/Prev to see more discs.

HP Format\* IBM 3740 Format Copy System\* 3 1 Start Format Start Clear EXIT FORMAT

Num Pad 0:05

Select the disc(s) you wish to format. If it is a fixed disc, touch the letter of the drive on the screen. If it is a flexible disc, place the blank disc into a drive, then touch the letter of that drive on the screen.

Each time you select a disc, you are asked to label it. Type up to 11 characters (such as MARY'S, DATA1, or ACCOUNTG'S) and **Return**. You do not have to type a label at all; press **No Disc Label** to leave the disc unnamed. Each chosen drive letter is highlighted. (The master discs HP shipped to you are labeled with the word MASTER, e.g., SYS\_MASTER, CALC\_MASTER).

If you want to format an eight inch disc in a way that can later be read by MS-DOS on an IBM 3740 format computer (single sided, single density, 8" disc), touch **IBM 3740 Format**. An HP 150 will be able to read and write to this disc, and the 3740 format machine will also be able to read and write to this disc. (Don't confuse this with the standard IBM PC format.) When an asterisk appears in the IBM 3740 Format label on the screen, it is on. (Touch **HP Format** to put the \* back into **HP Format**.)

The operating system (MS-DOS) and P.A.M. can be copied to the newly formatted disc at this time. If you want a copy of MS-DOS on the disc, touch **Copy System**. The asterisk (\*) that appears indicates that MS-DOS will be copied. This is the ONLY TIME that the operating system can be copied to a disc.

At this point, you have a choice; **Start Clear** or **Start Format**. If you just want to clear files off of an already formatted disc, press **Start Clear**. (If you press **Start Clear** for an unformatted disc, FORMAT detects this and formats the disc instead.)

---

### CAUTION

If you format a disc containing files, those files are lost.

---

Touch **Start Format** to begin formatting:

FORMAT Main

Select the discs to format and press Start Format.

DISC LABEL - DISC DRIVE

↓

- A

EXAMPLE - B

- C

- D

- E

- F

Press Next/Prev to see more discs.

HP Format\* IBM 3740 Format Copy System\* 3 1 Start Format Start Clear EXIT FORMAT

Num Pad 0:14

The selected discs are listed with a highlight on each one; the highlight indicates that the disc will be formatted. After a disc is formatted, the highlight is removed.

FORMAT

Formatting

FORMATTING DISC B

DISC LABEL - DISC DRIVE

EXAMPLE - B

3

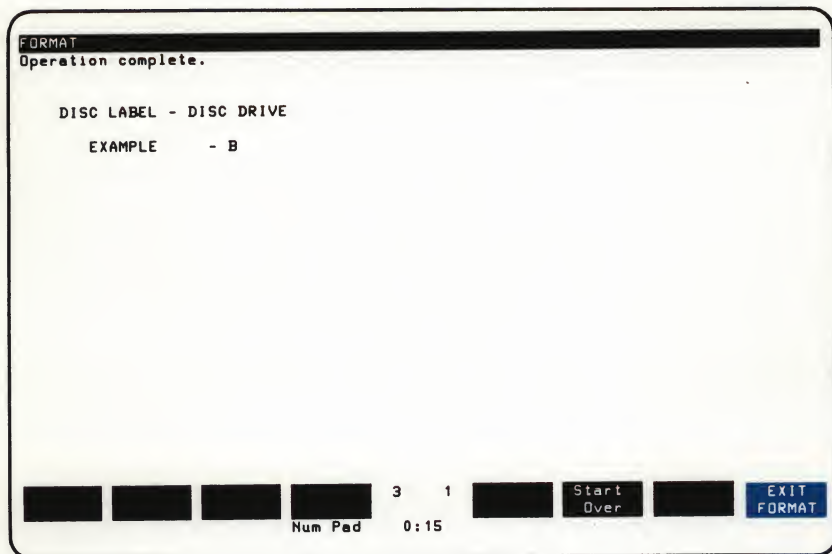
1

Stop  
Current

Num Pad 0:08

The disc being formatted is listed at the top of the screen. Press **Stop Current** to stop formatting the disc.

When all discs have been formatted, this screen appears:



Touch **Start Over** to format a new disc. Touch **EXIT FORMAT** to return to P.A.M..



# Preparing a Work Disc

A Work Disc is a disc with copies of applications programs or the operating system on it. Creating Work Discs is a good idea, because you can then put your Master Discs from HP in a safe place. Then, if a Work Disc is damaged, you can create another one.

To create a Work Disc, complete the following steps:

- 1) Format a blank flexible disc (you formatted fixed discs when you installed them - see Chapter 2.) If this Work Disc is going to be a copy of the operating system, be sure `Copy System` has an asterisk in it.
- 2) Install your application program(s) using the INSTALL program described in the applications chapter.

---

## NOTE

You usually don't put a copy of the operating system onto a disc that you put applications on, simply because of space constraints on a flexible disc. You usually load the 80K or so operating system from a separate disc, then remove that disc from drive A. The operating system remains in memory, and you then insert your applications disc into the drive.

---

You can put as many applications on a disc as will fit.

## Copying and Backing Up Discs

The best way to protect a file is to make another copy of it, and put that copy in a safe place. For this reason, Hewlett-Packard has sent you a program called COPY/BACKUP.

COPY/BACKUP is shipped to you on the Disc Applications disc. Use it from there, or install it onto another disc.

COPY makes an exact duplicate of a file(s); anything you can do to the original, you can do to the copy. BACKUP, on the other hand, removes extra space for offline storage. A file that has been backed up cannot be read by any application but BACKUP; run BACKUP again and restore the file before you use it with another application.

## **When Should I Use COPY?**

Use COPY whenever you want an exact duplicate of a file. For example, if you want to give a coworker a copy of a report, use COPY to put a copy of the report on another disc.

---

### **NOTE**

To copy a file to another directory (or other name) on the same disc, use File Manager's Copy command.

---

If you want to, you can COPY your whole disc. The only files that cannot be copied are MS-DOS and application programs. (Use the FORMAT program to copy MS-DOS. Use the INSTALL program to put a copy of an application program onto a disc.)

## **When Should I Use BACKUP?**

Use BACKUP whenever you need to conserve space and don't need to use the BACKUP copy with an application. BACKUP is most useful when you are protecting the files on a fixed disc. A large file can be split and backed onto two flexible discs. A 5, 10, or 15 megabyte disc can be backed up to flexible discs (then restored) in case of accident.

## **Using COPY/BACKUP**

COPY/BACKUP was sent to you on a disc called Disc Applications found inside this manual in a plastic sleeve. Make sure that a disc containing COPY/BACKUP is located in one of your drives.

From P.A.M., touch COPY/BACKUP then START/APPLIC on the screen:

Personal Applications Manager (P.A.M.)Main

Select an application to run and press Start Applic.

Hewlett-Packard

01/01/1983

Format  
A

Copy/Backup  
A

MSDOS Comands  
A

Install  
B

SET UP P.A.M.  
B

Start  
Applic

Set Date  
and Time

Reread  
Discs

31

File  
Manager

Terminal

Help

Num Pad

0:03

The main screen of COPY/BACKUP appears:

COPY.BACKUPMain

Where are files coming from? Type a disc (A:) or directory name. Press Return.

Files From:

Files To:

31

Start  
Over

Help

EXIT  
COPY/BKD

Num Pad

0:28

---

### NOTE

You can now remove the COPY/BACKUP program from the drive.

---

Type a disc letter to look at the current directory files on that disc (e.g., A: would let you see the current directory files on disc A:). Remember that A:\ always means "the root directory on this disc." Press . To look at only a certain directory (directory names are underlined), touch the directory name on the screen. (Another option is to type the disc and directory name right away, such as A:\USER or A:\USER\MARY.)

After you press , notice that the disc (directory) name that you selected appears after Files From: on the screen, and the files in that directory are on the screen. The file type (standard, HP150 backup, or CP/M) appears in the upper right of the screen, and the function key labels correspond to the file type.

Type or select the directory to copy or backup files to. Press . (Remember that BACKUP files cannot go on the same disc as any standard files.)



## Copying or Backing Up a File

If the files you have chosen are standard, the screen now looks like this:

COPY/BACKUP		Main	Files : Standard	
<u>Press Copy Files, Backup Files or Copy to CP/M.</u>				
Files From: A:		2661 bytes available.		
Files To: B:				
ALPHA01	ALPHA02	ALPHA03	MAILLIST	MAILLIST.2
PHONE.LST	PROPOSAL	REALESTA	ROSTER	SELECTON.MY
SELECTON.YOU	SLATE	TAPES	TASKS	
Copy Files		Backup Files	Copy to CPM	
Num Pad		3	1	
		0:30	Start Over	Help
				Exit COPY/BKP

The chosen files will be added to the disc or directory named in Files to on the screen.:

If you decide to back up a different directory, touch **Start Over**.

If you decide not to do any copying or backing up, touch **Exit COPY/BKP**.

If you want more information, touch **Help**.

You have three choices: you copy files to CP/M format, copy files, or create backup files. To convert these files to CP/M format (for use with an HP 120 or HP 125), press **Copy to CPM**. Otherwise, touch **Copy Files** or **Backup Files**, press **Help** if you can't decide which to use.



You are then asked to select files:

COPY/BACKUP		Main		Files : Standard	
<u>Select the files to copy. <del>SELECT ALL</del> <del>SELECT ALL</del> the files.</u>					
Files From:	A:	65536 bytes available.			
Files To:	B:				
ALPHA01	ALPHA02	ALPHA03	MAILLIST	MAILLIST.2	
PHONE.LST	PROPOSAL	REALESTA	ROSTER	SELECTON.MY	
SELECTON.YOU	SLATE	TAPES	TASKS		
Select by Name	Unselect by Name	Select ALL	Reread Discs	3 1	Start Copy
			Num Pad	0:34	Start Over
					Select by Date
					COPY/BKP Main

The next step is to choose files for copying or backing up. You can choose files, change your mind, and rechoose files until you touch **Start Copy** or **Start Backup**. The discs are not modified until you touch either of these start labels.

If you have a lot of files, they may be listed on the second page of the screen display. Press **Next** and **Prev** to switch between the two pages.

Touch a file name on the screen to select it. When a file is selected, its name lights up on the screen. Touch a file again to unselect it.

**Select by Name** allows you to use wildcard symbols to select files. If you press **Select by Name**, you are asked to type a wildcard name. Type either an entire filename, or a filename containing the wildcard \* or ?. The symbol \* means "any letters"; use the wildcard name Mem\* to choose the files Memory, Memo1, and Memo2 from the entire list of file names. Use the wildcard Mem? to choose the files Memo1 and Memo2 from the entire list of file names. The symbol ? means "any one letter."

**Unselect by Name** allows you to use wildcard symbols to unselect (turn the light off) files. Use the same wildcard symbols (\* and ?) that you use to select files.

**Select All** selects all files.

**Select by Date** allows you to select files altered after a certain date.

Touch **Select by Date**. The message "Files modified after a certain date can be selected. Type the date." appears. Type the date (mm-dd-yy or mm/dd/yy) and press **Return**.

If you switched flexible discs in a drive touch **Reread Discs** to list the files on the screen.

If you change your mind about which files to copy or back up, touch **Start Over**.

If you don't want to copy/backup anything at all (or if you want to change the source or destination), touch **COPY/BKP Main**.

Be sure that a formatted disc is in the destination drive.

Touch **Start Copy** (or **Start Backup**). The selected files are listed (largest to smallest) with highlights on each name:

COPY/BACKUP		Copying		Files : Standard	
Copying PROPOSAL					
Files From: A:		65536 bytes available.			
Files To: B:		238592 bytes available.			
ALPHA01	ALPHA02	ALPHA03	MAILLIST	MAILLIST.2	
PHONE.LST	PROPOSAL	REALESTA	ROSTER	SELECTON.MY	
SELECTON.YOU	SLATE	TAPES	TASKS		

3

1

Stop

Num Pad 0:36

---

### NOTE

If COPY/BACKUP detects that a file already exists on the destination disc, it stops, displays the duplicate file names, and asks you if you want to overwrite the files. Answer by touching **Yes** or **No**.

---

The file being copied (or backed up) is named at the top of the screen. Once a file is copied, the highlight on its name is removed. If a file cannot be copied, the highlight is not removed.

Touch **Stop** to immediately stop copying and return to the previous screen.

When all possible files have been copied, the message "Copy is completed." appears. (If an error occurs, copying also stops.) Any files that are still highlighted have not been copied or backed up. If you want these files copied, take note of their names, press **Continue**, and start again by selecting the files to be backed up.

## Backing Up Large Files

With BACKUP, if a file is larger than an entire flexible disc, you will have to split it between flexible discs to back it up. Since BACKUP starts with the largest file, BACKUP finds the largest file first. A message tells you that this file can only be backed up on more than one disc, and asks if that is all right. Answer by touching **Yes** or

**No** :

FILE: "MAMOTH" LARGER THAN A SINGLE DISC.  
Do you want to backup this file to multiple discs?

Files From: A:

Files To: B:

1024 bytes available.

32768 bytes available.

MAMOTH

No

3 1

Yes

Num Pad 3:27

If you touch **No**, this file is not backed up.

If you touch **Yes**, part of the file is backed up. Then, you are asked to put another formatted destination disc into the drive; the second part of the file is backed up to this disc. If necessary, more destination discs are requested.



If a file is smaller than an empty destination disc, but larger than the room left on the destination disc, that file is skipped and any remaining smaller files are marked for copy. If the last file is larger than the space left (and 25% or more of the destination disc space is available), you are asked if you want to split the file between discs (Should backup files overlap discs?):

SHOULD BACKUP FILES OVERLAP DISCS? (so all destination disc space is used)  
If you want files to start and end on different discs, press "Yes".

Files From: A:1024 bytes available.

Files To: B:92032 bytes available.

ROSTER

No

31

Yes

Num Pad

3:26

If you touch **No**, this file is not split; you are asked to provide another disc to store this file.

If you touch **Yes**, part of the file is backed up. Then, you are asked to put another formatted destination disc into the drive; the second part of the file is backed onto this disc.



# Converting CP/M Files to MS-DOS Files

When COPY/BACKUP starts, you are asked to indicate a disc of files that you want to copy or back up and a disc to receive the new copies:

COPY.BACKUPMain

Where are files coming from? Type a disc (A:) or directory name. Press Return.

Files From:

Files To:

31

Start Over

Help

EXIT  
COPY/BKD

Num Pad0:28

If the disc you indicate contains CP/M files, the upper right hand corner of the screen says 120/125 CP/M, and the first label says

Copy From CP/M:

COPY/BACKUP		Main		120/125 CP/M	
Where are files going? Type a disc (B:) or directory name. Press Return.					
Files From:	A:	2661 bytes available.			
Files To:	B:				
ALPHA01	ALPHA02	ALPHA03	MAILLIST	MAILLIST.2	
PHONE.LST	PROPOSAL	REALESTA	ROSTER	SELECTON.MY	
SELECTON.YOU	SLATE	TAPES	TASKS		
Copy From CPM			3 1	Start Over	Help
Num Pad			0:20	Exit COPY/BKP	

You can **Start Over** or **Exit COPY/BKP**, just as you can with standard files.

Press **Copy From CPM** to see this screen:

COPY/BACKUP		Main		Files : 125 CP/M	
Select the files to copy. Select ALL selects all the files.					
Files From:	A:	65536 bytes available.			
Files To:	B:				
ALPHA01	ALPHA02	ALPHA03	MAILLIST	MAILLIST.2	
PHONE.LST	PROPOSAL	REALESTA	ROSTER	SELECTON.MY	
SELECTON.YOU	SLATE	TAPES	TASKS		
Select by Name	Unselect by Name	Select ALL	Reread Discs	3 1	Start Copy
Num Pad			0:34	Start Over	COPY/BKP Main

Your means to select files are similar to the means used with regular files. Touch a file to select it, or touch **Select by Name**, **Unselect by Name**, or **Select All**.

When you have chosen the files to be converted from CP/M format to MS-DOS format, press **Start Copy**.

Each file will be read from the CP/M disc, and changed to an MS-DOS file with the same name on the MS-DOS disc. The original CP/M disc can still be used with CP/M.

## Restoring Files From a Backup

When COPY/BACKUP starts, you are asked to indicate a disc of files that you want to copy or back up and a disc to receive the new copies:

COPY.BACKUP Main

Where are files coming from? Type a disc (A:) or directory name. Press Return.

Files From:

Files To:

3 1

Num Pad 0:28

Start Over Help EXIT COPY/BKD

If the disc you indicate contains backup files, the upper right hand corner of the screen says 150 BACKUP, and the first label says

Restore Files:

COPY/BACKUP		Main		Files : 150 Backup	
<u>Press Restore Files.</u>					
Files From:	A:	18176 bytes available.			
Files To:	B:				
ALPHA01	ALPHA02	ALPHA03	MAILLIST	MAILLIST.2	
PHONE.LST	PROPOSAL	REALESTA	ROSTER	SELECTON.MY	
SELECTON.YOU	SLATE	TAPES	TASKS		
Restore Files		3 1	Start Over	Help	Exit COPY/BKP
Num Pad		0:07			

You can **Start Over** or **Exit COPY/BKP**, just as you can with standard files.

Press **Restore Files** to see this screen:

COPY/BACKUP		Main		Files : 150 Backup	
<u>Select the files to copy. Select ALL selects all the files.</u>					
Files From:	A:	18176 bytes available.			
Files To:	B:				
ALPHA01	ALPHA02	ALPHA03	MAILLIST	MAILLIST.2	
PHONE.LST	PROPOSAL	REALESTA	ROSTER	SELECTON.MY	
SELECTON.YOU	SLATE	TAPES	TASKS		
Select by Name	Unselect by Name	Select ALL	Reread Discs	3 1	Start Copy
Num Pad		0:08			
		Start Over	Select by Date	COPY/BKP Main	

Your means to select files are the same as they are with standard files. Touch a file to select it, or touch **Select by Name**, **Unselect by Name**, **Select by Date**, Or **Select All**.

When you have chosen the files to be restored from a previous backup, press **Start Restore**:

Each file will be read from the backup disc, and restored as a regular file on the destination disc. The backup disc still contains the backup files, and can be restored again.



## Break

### BREAK ON BREAK OFF

Type BREAK ON if you want to be able to end an application (at the next "break" point) by typing CTRL and C simultaneously; CTRL C will restart the operating system. Type BREAK OFF if you want to be able to type CTRL C within a program without terminating the program.

## CHDIR

### CHDIR *pathname*

As described in Chapter 4, files can be stored beneath one another in a "tree" structure; a directory gives you a list of your current "branch." If you wish to change directories (branches), type CHDIR *parent\next level\etc.*, where the *pathname* is the new branch (You can always use *..\.* to go up a directory tree, and *\* to go to the root.)

## CHKDSK

### CHKDSK *d:discname* /F /V

Check a disk for errors in its directory by typing CHKDSK. For example, a disc in drive B: named MARYS would be checked and fixed (/F), with messages displayed on the screen (/V) by typing CHKDSK B:MARYS /F /V. These problems can't be fixed by /F:

Message	Solution
Incorrect DOS version	Use 2.0 or higher.
Insufficient memory	Obtain more memory to use
Errors Found, F not specified	Do again; use /F
Invalid Current Directory	Restart the system; do over
Cannot CHDIR to root	Bad disc; try RECOVER
File is cross linked on cluster	Make new copy of File; delete other two cross linked files.

Lost clusters found in chains	Type Y to create a directory entry and file (FILEnnnnnnnn). You are then told how much space has been freed (how much would have been if you typed N.)
Probable non-DOS disc	Type Y to try to check it any way; type N to abandon.
Insufficient room in root directory	Erase files in root; repeat.
Unrecoverable error in directory.	Type Y to convert bad directory to a file; fix or delete file.

CLS Clears the screen.

COPY \* *COPY X: pathname origname X: pathname newname /V*

Copy a file to another disc by typing this command; also, create another copy of a file on the same disc, but with a new name. X refers to drive letter; pathname optionally refers to a level in a directory; /V means "verify that copies match."

*COPY X:ABC + X:DEF X:BIGFILE*

Use this form of the command to combine files.

CTTY *CTTY \Dev*

Type CTTY \DEV to issue commands from a new device. For example, to enter and print everything from an auxiliary device (aux), the command would be CTTY \aux.

DATE \*

**DATE**  
**DATE MM-DD-YY**

Type just the word DATE, and you will be asked to supply a date. Type DATE 12-25-83 to change the date inside the computer to December 25th, 1983.

DEL \*

**DEL X:Filename pathname**

Delete a file by typing the DEL command and the filename. If the file is in another directory, use the optional pathname (**\path\path\etc.**). To clear all files from a directory, type DEL \*.\*.

DIR \*

**DIR X:Filename pathname /P /W**

List all files in the default Directory by typing DIR. Type B: Return, then DIR to see only files on disc B:. Type DIR Chapter6 to see only information on the file Chapter6 on the current disc. Add the optional pathname if you want to list a directory other than the one you are in. Add /P to show the directory a page at a time. Add /W to strip off all information but filenames; this compacts the list. DIR \*.EXT will list all files with EXT as extension.

DISKCOPY

DISKCOPY is shipped on the Programmer's Pac disc.

ECHO

ECHO is used in Batch files. See the advanced user's guide for more information..

EXE2BIN

EXE2BIN is shipped on the Programmer's Pac Disc.

EXIT

**EXIT**

Type this from the command prompt to return to P.A.M. from the MS-DOS prompt.

FIND

The FIND command is shipped on the Programmer's Pac disc.

FOR

The FOR command is used primarily in Batch files. See the advanced user's guide for more information.

**FORMAT \*\*****FORMAT**

Type **FORMAT** to start the Hewlett-Packard **FORMAT** program, as described in the chapter on Discs.

**GOTO**

**GOTO** is used in Batch files. See the advanced user's guide for more information.

**IF**

**IF** is used in Batch files. See the advanced user's guide for more information.

**MKDIR\*****MKDIR** *pathname*

Type **MKDIR \name\etc.** to create a subdirectory of the root directory. For example **MKDIR Mary** would create the subdirectory **Mary** in the current subdirectory **Mary** in the current directory.

**MORE****MORE**

Type **|MORE** after other commands to see screen listing one page at a time. For example, **TYPE MYFILES.COM |MORE** will type a page of **MYFILES** onto the screen, then wait for you to touch the return key for another page.

**PATH****PATH** *pathname; pathname*

Type **PATH \name\etc.** to tell MS-DOS what directory your operating system commands are stored under. If you haven't moved them, they are all under **\BIN**; **\BIN** will always be searched in addition to the pathnames you give. For example, **PATH \BIN\USER\STEVE;PATH \BIN\USER\AIMEE** would result in three directories being searched when an external command is given.

**PAUSE**

**PAUSE** is used in batch files. Batch files are explained in the advanced user's manual.

**PRINT \*****PRINT** *X:Filename /T /C /S*

Typing **PRINT B:File** prints **File** on your printer, and lists any other files in the print queue on the screen. Add **/T** to terminate all other files in the print queue. Add **/C** to suspend all printing until another **PRINT** command with **/P** added continues the printing. The following errors may occur:

Message	Explanation
Name of list device [PRN]	Appears the first time PRINT is run. Type LST (printer), CON (console), or AUX (auxiliary port); if you type nothing PRN is used.
List output is not assigned to a device	Name of list device (see above) is invalid.
Print queue is full	Only 10 files can be in the queue at once.
Print queue is empty	There are no files in the print queue.
No files match X:Filename	You tried to print a file that can't be found.
Drive not ready	The disc containing the file to be printed isn't ready. Print will keep trying to get to it.
All files canceled	You issued the /T switch.
File canceled by operator	You issued the /C switch.

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## Chapter 8

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# TYPING MS-DOS COMMANDS

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## PROMPT

## PROMPT \$X

The default prompt for the command processor is A>, where A is the default disc. You can change the MS-DOS prompt by typing PROMPT, a \$, and one of the characters below.

Character	Prompt
\$	\$
t	current time
d	current date
p	current default drive directory
v	MS-DOS version number
n	default drive
g	>
l	<
b	
-	cursor advances one line
s	a space
h	a backspace
e	ASCII code x'1B' (escape)

Type PROMPT to see the default drive as prompt. Type PROMPT \$Time = \$t\$\_DATE = \$d to see two lines:

Time = 9:00 am  
Date = 7/5/83

## RECOVER

## RECOVER *Filename* RECOVER X:

Type RECOVER and a disc letter to recover a disc that is causing read-write errors. MS-DOS reads the disc sector by sector, marking the unreadable sectors as bad. After the disc is recovered, copy the contents to a good disc.

If there is not enough room in the root directory, RECOVER prints a message to that effect, and stores information about the extra files in the File Allocation Table. In this case, delete some files from the root directory, and run RECOVER again.

## REM

REM is used in batch files. Batch files are explained in the advanced user's manual.

**REN \***

**REN** *X:Filename1 Filename2*

Type **REN** with the original filename and the new filename to rename the original. You could use wildcard characters to make global changes. For example, **REN B:\*.LST \*.PRN** would change all .LST files on disc B to .PRN extensions. **REN B:AAA ??B** would result in the file named B:AAB.

**RMDIR \***

**RMDIR** *pathname*

Type **RMDIR A:\Dir\Subdir** to remove an empty directory. Check to be sure that the directory is empty by using **DIR** first.

**SET**

**SET** is primarily used in Batch files. See the advanced user's guide for more information.

**SHIFT**

**SHIFT** is used in Batch files. See the advanced user's guide for more information.

**SORT**

**SORT** is shipped on the Programmer's Pac disc.

## TIME \*

### TIME TIME *hh:mm*

Use the TIME command to display and set the time.

Type TIME to see the correct time - you are also asked to type a new time. To leave the time the same, press [Return]. To change the time, type a valid time and press [Return].

Type TIME 8:20 and you change the time on the HP 150 clock to 8:20. TIME 23:59 would change the time to the equivalent of 11:59 pm on this 24 hour clock. (Valid hours are 1 - 24. Valid minutes are 00 - 59. Valid seconds are 00-60. Valid hundredths of a second are 00 - 99.) You could add seconds and hundredths of seconds, as in 8:20:33.99.

## TYPE

### TYPE *X:Filename*

Use the TYPE command to display the contents of a file on the screen. TYPE B:CHAPTER6 would list the file CHAPTER6 on the screen. TYPE B:CHAPTER6!MORE would list the file one page at a time. (See the MORE command, which is used with TYPE.)

## VER

### VER

Type VER to see the MS-DOS version you are using.

VERIFY \*\*

**VERIFY ON**  
**VERIFY OFF**

Type VERIFY ON if you want the disc checked every time you write data to it. VERIFY checks for bad tracks, and makes sure files are intact. If you want to know if VERIFY is ON or OFF, just type VERIFY.

VOL

**VOL X:**

Type VOL and a disc letter to see the volume ID (name), if there is one, of the disc in the default drive.

\* *Use the File Manager in P.A.M. to do this.*

\*\* *Use HP 150 Disc Applications to do this.*

Return to P.A.M. by typing EXIT and pressing .





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# **Appendix A**

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## **CONFIGURING THE HP 150**

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The HP 150 has many characteristics that are built into it. However, you have some choices to make, as different people have different computer needs. Do you want a printer that connects via HP's own cable, or a printer that connects via standard cable? If you have three disc drives, which one is named A:? If you have two identical printers, how do you tell them apart?

Since answers to such questions vary, the HP 150 has made them changeable. By setting values in Configuration Menus, you decide how your computer will function.

The four Hewlett-Packard configurations are shown on the next page. The MS-DOS configuration is shown later in the appendix. Default settings are shown in the pictures of the screens. They are also listed first in the explanations.

# Configuring Hardware

To configure the HP 150 as a terminal to an HP 1000 or HP 3000, see the *HP 150 Terminal User's Guide*. This appendix covers only the meanings of each entry.

To access the Config Menus<sup>\*</sup>, press  twice on the keyboard, followed by :

device control	margins/ tabs/col	service keys	modes	1	1	enhance video	define fields	set time	config Keys
Num Pad				12:00					

These labels appear:

global config		port 1 config	port 2 config	1	1	terminal config	accessory config		
Num Pad				12:00					

The first four configuration menus shown above control:

- |   |  |
|---|--|
| <input type="button" value="global config"/>    | the keyboard and system processor. For example, should the keyboard click? Do you want a computer or a terminal?   |
| <input type="button" value="port1 config"/>     | whatever is connected to port 1. If you transmit directly to a mainframe computer or modem, we recommend that you connect your cable here. Otherwise, any RS232 device can be connected.             |
| <input type="button" value="port2 config"/>     | whatever is connected to port 2. This could be a mainframe computer, modem, printer, plotter, or any other RS232 communication.  |
| <input type="button" value="terminal config"/>  | the HP 150 terminal. What happens when the <input type="button" value="Return"/> key on the keyboard is pressed? When data is sent to the host computer, which columns on the screen should be sent? |
| <input type="button" value="accessory config"/> | this is for future use by Hewlett-Packard.   |

<sup>\*</sup> You can access Config Menus from the MS-DOS prompt, from BASIC, from local mode, or from the MS-DOS Configuration program.

## Global Configuration

GLOBAL CONFIGURATION

Click On

Keyboard USASCII

Power On Computer

Op Sys Dev HP-IB 0

Remote/Serial Dev PORT1/PORT2

SAVE config

NEXT CHOICE

PREVIOUS CHOICE

DEFAULT VALUES

3

13

POWER ON VALUES

ACTIVE VALUES

DISPLAY FUNCTNS

config keys

Num Pad 12:00

To change any full-bright configuration entries, cursor to the entry then press **f2** (**NEXT CHOICE**). To change any half-bright entries, cursor to the entry and type the new entry. Press **f4** (**DEFAULT VALUES**) to use the values HP chose as defaults. Press **f5** (**POWER ON VALUES**) to use the values that appeared when the configuration was last saved. Press **f6** (**ACTIVE VALUES**) to use the set of values that are active and in use by the computer.

**DISPLAY FUNCTION** is not useful at this level. (It allows you to create control codes needed in certain fields on other menus.)

Press **f1** (**SAVE CONFIG**) when all values are set the way you want them. These values are then active and in use by the computer. The next time you power on, these values will be used.

**config KEYS** returns you to the original screen. If you didn't press **SAVE CONFIG**, any changes you may have made are not recorded.

\* Make sure that the entry for Remote/Serial Dev matches the entry for "io" devices described in the chapter Using Your Equipment.

The meanings of the entries in the Global Configuration Menu are shown below.

**Click**

Click is the noise the keyboard makes when you press a key. It can be silent (OFF) or make a click (ON).

**ON      OFF**

**Keyboard**

Keyboard tells the HP 150 which keyboard to expect. You can use different keyboards with the HP 150.

**USASCII**

Svensk/Suomi

Dansk/Norsk

Francais azM

Francias quM

Francais az

Francais qw

Duetch

UK

Espanol M

Espanol

**Power on**

Power on determines what the HP 150 will be when you turn on the power switch. Your HP 150 can be a computer or a terminal for a host computer.

**COMPUTER      TERMINAL**

**Remote/SerialDev**

Remote refers to a mainframe computer; where do you have it connected, port 1 or port 2? Serial Device refers to a printer or plotter; where do you have it connected, port1 or port 2?

**Port1/Port2      Port2/Port1**



## Op Sys Dev

Operating System Device determines where the HP 150 looks for the operating system. You tell it to look either on the HP-IB port disc drive at address 0-7, or look on the disc drive connected to accessory slots 1 or 2.

HP-IB 0	HP-IB 1	HP-IB 2	HP-IB 3
HP-IB 4	HP-IB 5	HP-IB 6	HP-IB 7
Accessory 1		Accessory 2	

## Data Communications Configuration - Port 1

After you press **f3** (Port1 config) this menu appears:

FULL DUPLEX HARDWIRED				Port 1			
BaudRate	2400	Parity	0's	DataBits	7	Clock	INT
Asterisk	Off	Stop Bits	1	EnqAck	Yes		
TR(CD)	Hi	Check Parity	No	SR(CH)	Lo		
RecvPace	None	SRRXmit	No	RR(CF)Recv	No		
XmitPace	None	SRRInvert	No	CS(CB)Xmit	No	DM(CC)Xmit	No

SAVE	NEXT	PREVIOUS	system	3	10	config	DISPLAY	config
CONFIG	CHOICE	CHOICE	defaults			menus	FUNCTNS	keys
			Num Pad	12:00				

After you press **f6** (**config menus**), you are given two choices, **FULL DUP HRD WIRED** (connected with a cable), and **FULL DUP MODEM** (connected with a modem.)



FULL DUPLEX HARDWIRED

Port 1

BaudRate 2400 Parity 0's DataBits 7 Clock INT  
 Asterisk Off Stop Bits 1 EnqAck Yes  
 TR(CD) Hi Check Parity No SR(CH) Lo  
 RecvPace None SRRXmit No RR(CF)Recv No  
 XmitPace None SRRInvert No CS(CB)Xmit No DM(CC)Xmit No

config FULL DUP FULL DUP 3 10  
 HRDWIRED MODEM  
 Num Pad 12:00

Press f2 (FULL DUP HRD WIRED) to see:

FULL DUPLEX HARDWIRED

Port 1

BaudRate 2400 Parity 0's DataBits 7 Clock INT  
 Asterisk Off Stop Bits 1 EnqAck Yes  
 TR(CD) Hi Check Parity No SR(CH) Lo  
 RecvPace None SRRXmit No RR(CF)Recv No  
 XmitPace None SRRInvert No CS(CB)Xmit No DM(CC)Xmit No

SAVE NEXT PREVIOUS system 3 10 config DISPLAY config  
 config CHOICE CHOICE defaults menus FUNCTNS keys  
 Num Pad 12:00

Press **F8** (**config keys**) to change the function keys shown above.

Press **F3** (**FULL DUPLEX MODEM**) to see:

FULL DUPLEX MODEM				Port 1			
BaudRate	300	Parity	Odd	DataBits	7	Clock	INT
Asterisk	RR			Stop Bits	2	EnqAck	Yes
TR(CD)	H1	Check Parity	Yes	SR(CH)	Lo		
RecvPace	None					RR(CF)Recv	No
XmitPace	None						DM(CC)Xmit Yes

SAVE	NEXT	PREVIOUS	system	3	10	config	DISPLAY	config
CONFIG	CHOICE	CHOICE	defaults			menus	FUNCTNS	keys
			Num Pad	12:00				

# Data Communications Configuration - Port 2

After you press **f4** (**Port2 Config**), this menu appears:

FULL DUPLEX HARDWIRED

Port 2

BaudRate2400

Parity0's

DataBits7

AsteriskOff

Stop Bits1

EnqAckYes

TR(CD)Hi

Check ParityNo

SR(CH)Lo

RecvPaceNone

SRRXmitNo

RR(CF)RecvNo

XmitPaceNone

SRRInvertNo

CS(CB)XmitNo

DM(CC)XmitNo

SAVEconfig

NEXTCHOICE

PREVIOUSCHOICE

systemdefaults

3

10

configmenus

DISPLAYFUNCTNS

configkeys

After you press **f6** (**config menus**), you are given two choices, **FULL DUP HRD WIRED** (connected with a cable), and **FULL DUP MODEM** (connected with a modem).

FULL DUPLEX HARDWIRED

Port 2

BaudRate2400

Parity0's

DataBits7

AsteriskOff

Stop Bits1

EnqAckYes

TR(CD)Hi

Check ParityNo

SR(CH)Lo

RecvPaceNone

SRRXmitNo

RR(CF)RecvNo

XmitPaceNone

SRRInvertNo

CS(CB)XmitNo

DM(CC)XmitNo

config

FULL DUPHRDWIRED

FULL DUPMODEM

Num Pad

3

10

12:00

Press **f2** (**FULL DUP HRD WIRED**) to see:

FULL DUPLEX HARDWIRED				Port 2	
BaudRate	2400	Parity	0's	DataBits	7
Asterisk		Stop Bits	1	EnqAck	Yes
TR(CD)	H1	Check Parity	No	SR(CH)	Lo
RecvPace	None	SRRXmit	No	RR(CF)Recv	No
XmitPace	None	SRRInvert	No	CS(CB)Xmit	No
				DM(CC)Xmit	No

SAVE	NEXT	PREVIOUS	system	3	10		config	DISPLAY	config
CONFIG	CHOICE	CHOICE	defaults				menus	FUNCTNS	keys
			Num Pad		12:00				

Press **f6** (**config menus**) to change the function keys shown above.

Press **f3** (**FULL DUP MODEM**) to see:

FULL DUPLEX MODEM				Port 2	
BaudRate	300	Parity	Odd	DataBits	7
Asterisk	RR	Stop Bits	2	EnqAck	Yes
TR(CD)	H1	Check Parity	Yes	SR(CH)	Lo
RecvPace	None			RR(CF)Recv	No
XmitPace	None			DM(CC)Xmit	Yes

SAVE	NEXT	PREVIOUS	system	3	10		config	DISPLAY	config
config	CHOICE	CHOICE	defaults				menus	FUNCTNS	keys
			Num Pad		12:00				

A description of the entries in the Port 1 and Port 2 configurations are listed below. The default entry is listed first.

**Baudrate**

Baudrate tells the terminal how many bits of data it should send per second.

300**	2400*	110	134.5	600	1200
1800	2000	4800	9600	19200	

**Parity**

Parity determines what type of checking should take place: NONE (no parity bit), 0's (parity bit always zero), ODD (odd parity), 1's (parity bit always 1), or EVEN (even parity).

0\*    ODD\*\*    1    NONE    EVEN

**DataBits**

Data bits specifies how many data bits you want in each character for both sending and receiving. ASCII characters are normally passed as 7-bit data codes. (If you specify 8, parity must be NONE.)

7        8

**Clock**

Clock indicates whether the data comm clock source is to be generated by the terminal or by the external device. If an external clock is selected, this field also specifies whether the clock being supplied has 1 or 16 clock pulses per bit.

INT    EXT x1    EXTx16

\* Hardware default

\*\* Modem default



## Asterisk

Asterisk refers to two indicators on either side of the time (bottom of screen). When the transmit indicator for port 1 is on, the left asterisk appears. When the transmit indicator for port 2 is on, the right asterisk appears. The possible entries for Asterisk are RR and DM. RR stands for Ready Receive; an asterisk appears when the modem or terminal hears a carrier signal from the remote computer. DM stands for Data Mode; an asterisk appears when the modem is on and ready to send data.

**RR\*\* Off\* DM**

## StopBits

StopBits specifies the number of stop bits to be appended to each data character transmitted by the terminal.

**1\* 2\*\***

## EngAck

Do you want to use the Hewlett-Packard Eng Ack handshake (when mainframe inquires with Eng, the HP 150 acknowledges with ACK)?

**YES NO**

## TR(CD)

Terminal Ready specifies whether the RS-232 TR line should be set high or low when the terminal is powered on or reset. This indicates to the remote computer or printer that the HP 150 is ready.

**HI LO**

## CheckParity

Do you want to check the parity on each data character? (If you indicate YES, the Parity field entry (see above) must be set to either odd or even. If Parity is set to NONE, 0, or 1, no checking takes place.)

**YES\*\* NO\***

\* Hardware default

\*\* Modem default

<b>SR(CH)</b>	Signal Rate specifies whether the RS-232 SR line is set high or low when the terminal is powered on or reset. <b>LO      HI</b>
<b>RecvPace</b>	Receive pacing is a mechanism by which the terminal automatically halts and resumes the transmission of data from a remote device. (This is only available in full duplex environments.) TR(CD) means the terminal performs receive pacing using the Data Terminal Ready control line. XonXoff means the terminal performs receive pacing using Xon and Xoff control codes; the HP 2601 and HP 2602, for example, use XonXoff. For more information, see the <i>HP 150 Terminal User's Guide</i> . <b>NONE      TR(CD)      XonXoff</b>
<b>SRRXmit</b>	This field specifies whether a true state (+12V) on the RS-232 Receiver Ready (RR) or Data Carrier Detect (CF) control line is a required condition for transmitting data. <b>NO      YES</b>
<b>SRRInvert</b>	When SRRXmit is set to YES and SRRInvert is set to YES, the true state of the RS-232 Receiver Ready (SRR) or Secondary Carrier Detect (SCF) control line is detected as -12V instead of +12V. <b>NO      YES</b>
<b>RR(CF)Recv</b>	This field specifies whether a true state (+12V) on the RS-232C Receiver Ready (RR) or Data Carrier Detect (CF) control line is a required condition for receiving data. Note that the Asterisk field can be set to indicate the state of this line when set to RR. <b>NO      YES</b>

**XmitPace**

Transmit Pacing is a mechanism by which the host computer can stop and resume the transmission of data from the terminal. This is only available in full duplex environments. The transmit pace can be NONE or Xon Xoff pacing. For more information, see the *HP 150 Terminal User's Guide*.

**NONE    XonXoff**

**CS(CB)Xmit**

Is a true state (+12V) required on the RS-232 Clear to send line required to transmit data? (With some computers, the answer is yes. With an HP 3000, the answer is no.)

**NO    YES**

**DM(CC)Xmit**

This field monitors pin 6 of the datacommunications port; pin 6 represents dataset ready (CC). Pin 6 is not used by most computers. If you indicate YES, pin 6 must be active before information is sent to a modem. If you indicate NO, pin 6 is ignored.

**NO\*    YES\*\***

## Terminal Configuration

```

      TERMINAL CONFIGURATION

      Bell ☒ On      Cursor Type ☒ Line      Tab - Spaces ☒ No

      RETURN Def ☒ S      RETURN-ENTER ☒ No      PrinterCode4 ☒ Ext      PrinterNulls ☒ 0
      Local Echo ☒ Off      Caps Lock ☒ Off      Start Column ☒ 1      ASCII 8 Bits ☒ No

      XmitFnctn(A) ☒ No      SPOW(B) ☒ No      InhEolWrp(C) ☒ No      Line/Page(D) ☒ Line
      InhHndShk(G) ☒ No      Inh DC2(H) ☒ No      Auto Term(J) ☒ No      ClearTerm(K) ☒ No
      InhSlfTst(L) ☒ No      Esc Xfer(N) ☒ No      InhDcTest(W) ☒ No
                                           Graph Compat ☒ Off

      Field Separator ☒ 0      Block Terminator ☒ H      Alternate Set ☒ Line(B)

      Terminal Id ☒ 150A      Transmit ☒ All Fields

      SAVE      NEXT      PREVIOUS      system      3      14      DISPLAY      config
      CONFIG    CHOICE    CHOICE    defaults      Num Pad      12:00      FUNCTNS      keys
  
```

To change any full-bright configuration entries, cursor to the entry and press **F2** (**NEXT CHOICE**). Press **F2** (**system defaults**) to use the values HP chose as defaults. To change any half-bright entries, cursor to the entry and type the new entry.

Use **DISPLAY FUNCTIONS** to create the control codes needed for entries such as RETURN Def, field separator, and block terminator. Position the cursor; press **f7** (**DISPLAY FUNCTIONS**) once to turn it on (\* appears); type the key(s) that you want to use; press **f7** (**DISPLAY FUNCTIONS**) again to turn off.

Press **F1** (**SAVE CONFIG**) when all values are set the way you want them. These values go into effect immediately, and are also used the next time you power on.

**CONFIG KEYS** returns you to the original screen.



The meanings of the Terminal Configuration entries are as follows:

**Bell**

There is a bell inside the HP 150 that rings when you near the end of a line or when the cursor advances to another field in a formatted display. You can turn this bell OFF. The bell will, however, still sound in response to a ☐ CTRL ☐ G typed at the keyboard or sent from a program.

**ON      OFF**

**Cursor Type**

The HP 150 cursor can be represented on the screen by a box or a line.

**Line    Box**

**Tab=Spaces**

If you want the cursor to move to the next set tab (leaving spaces in its wake) when you press ☐ Tab, set Tab=Spaces to YES. If you want the cursor to skip over characters, leave it set to NO.

**NO      YES**

**Return Def**

The Return definition refers to action you want to take place when you press ☐ Return. A carriage return is the default (Cr). Position the cursor at this field and type any other key(s) to change it.

**any one or two action generating keys**

**Return=ENTER**

When ☐ Return is pressed, do you want the information ENTERed at the host computer? (ENTER tells the host "execute this information.") This causes ☐ Return to use block mode handshaking (useful for HP 3000 VIEW applications). (See the explanation for the ☐ ENTER key in the *HP 150 Terminal User's Guide*.)

**NO      YES**



**Printer Code4**

PrinterCode4 specifies which printer (external printer or integral printer) will respond to device code 4 when the terminal receives a device control escape sequence from a host computer.

**EXT**    **INT**

**Printer Nulls**

Printer Nulls specifies how many ASCII null codes (0-255) are transmitted to an external printer after each ASCII control code.

**0**    **-**    **255**

**Local Echo**

When Local Echo is ON, characters entered through the keyboard are both displayed on the screen and transmitted to the host computer. When Local Echo is OFF, characters are only sent to the host computer. (Most computers echo the letters back after they receive them, so you would leave Local Echo OFF. In half duplex mode, as with modems, Local Echo should be ON.)

**OFF**    **ON**

**Caps Lock**

Caps Lock does more than pressing the CAPS key on the keyboard does. When ON, the terminal generates only Telytype-compatible codes: uppercase ASCII (00-5F, hex) and DEL (7F, hex). Unshifted alphabetic keys (a-z) generate the codes for their uppercase equivalents, the { [ and } keys generate codes for [ \ and ] respectively. The keys for generating ~ and ` are disabled.

**OFF**    **ON**

## Start Column

Start Column is used with Modify Line and Modify All. If the line of data being entered is the last typed line in display memory so far, the terminal automatically generates a logical start-of-text pointer indicating the first character of the line. This pointer remains with the line until it is deleted, so the terminal always knows where in the line to start sending characters to the host computer.

If, however, a line has no start of text pointer, the terminal looks to the value in Start Col and uses it as a pointer. When you are operating in MODIFY mode (see the *HP 150 Terminal User's Guide* and press  or , data is sent from the column indicated to the end of the line if a line has no start-of-text pointer. (You can temporarily alter the value of this field by using one of the `margin/tab/col` function keys.)

1 - 80

## ASCII 8 bits

Standard ASCII codes are 7 bits long; Hewlett-Packard, however uses a full 8 bit code with certain HP line printers. This field is mainly for multilingual purposes.

NO YES

## Xmitfncn(A)

When this entry says YES, escape code sequences generated by major function keys (such as  or ) are sent to the host computer. When the entry is NO, the action takes place at the terminal, but the host computer is not contacted.

NO YES

**SPOW(B)**

When SPOW(B) is set NO, spaces entered through the keyboard overwrite existing characters. When SPOW(B) is set YES, (Enable SPace OverWrite) a teletype or printer is emulated (spaces don't overwrite existing characters.) This is a two part latch, in that it must be 'armed' by setting SPOW(B)=YES and then turned on with ESC & R 1 N and then a carriage return without a linefeed (the cursor remains on the same line). It is turned off with ESC & K 0 N.

**NO YES**

**InhEolWrp(C)**

When Inhibit End-of-line Wrap is set to NO, the cursor advances from the last column of a line to the first column of the next line. When Inhibit End-of line Wrap is set to YES, the cursor stops at the end of a line; you have to press  to move it to the beginning of the next line.

**NO YES**

**Line/Page(D)**

Lines or Pages deals with Block Mode. Line means the terminal transmits a line of data at a time. Page means the terminal transmits a page of data at a time.

**LINE PAGE**

**InhHndShk(G)**

and

**Inh DC2(H)**

Together, the G and H entries determine what kind of handshaking is used when blocks of data are transferred to the host computer.

Various block transfers that may occur are:

- 1) A data transfer initiated by pressing  while in character, block-line, or block-page mode.
- 2) A data transfer initiated by pressing  or  in key MODIFY mode.
- 3) A data transfer initiated by pressing a transmit only (T) user key (f1 - f8).

- 4) The terminal's response to a cursor sense, terminal ID status, primary status, secondary status, or device status request issued from the host computer.
- 5) The device control completion code (S, F, or U) transmitted by the terminal in conjunction with a device control operation initiated by the host computer.

When doing block transfers, three possible handshakes can be used:

**NONE** No handshake; terminal merely transmits block of data.

**SHORT** Computer sends <DC1>; terminal transmits block of data.

**LONG** Computer sends <DC1>; terminal responds with <DC2>; computer responds with another <DC1>; terminal transmits block of data.

If you set Inhibit Handshake to YES, the first or third options above are used.

If you set Inhibit DC2 to YES, the first or second options above are used.

If BOTH InHndShk(G) and Inh DC2(H) are set to YES, option one above occurs.

For more information on this subject, see the *HP 150 Terminal User's Guide*.

**YES**    **NO**



#### Auto Term(J)

The Automatic Terminator has an effect only when the  key is pressed in block mode. If set to YES, pressing  inserts a non-displaying terminator at the cursor, then moves the cursor backward to the previous terminator (home if there are none). This allows partial blocks of data to be sent in Block Mode. If set to NO, no terminator is inserted and the cursor does not move backward.

NO YES

#### Clear Term

Clear terminators has an effect only when terminators are terminating a transfer operation. If set to YES, they are removed so the transfer takes place. If set to NO, the terminators are not cleared.

NO YES

#### InhSlfTst(L)

Inhibit Self Test disables (YES) the power-on test, terminal test, and internal printer test function keys that appear when you press , then  on the keyboard. If you want these function keys to work, do not inhibit them (NO).

NO YES

#### GraphCompat

Graphics compatibility refers to Tektronics 4010/4014 compatibility. Tektronics values which are in the 4K address range are divided by 8 if this field is set to Scaled (scaled 4010) or Scl 4014 (scaled 4014) and divided by 4 if set to Unscaled (unscaled 4010) or Uns 4014 (unscaled 4014).

Off    Unscaled    Scaled  
Uns 4014    Scl 4014



### Esc Xfer(N)

Escape transfer deals with sending information to a printer. If you want to send escape sequences relating to the display (e.g., display enhancements, format mode fields, and alternate character sets) along with the rest of your text, set Escape Transfer to YES. If you want to send just data to the printer, set Escape Transfer to NO.

NO YES

### Inh DcTst(W)

Inhibit datacommunication self test allows you to skip (YES) the datacommunication test; if you press **DATA COMM TEST** under **service keys**, the error message "FUNCTION LOCKED" appears. If you want the test to take place, set Inhibit Datacommunication Test to NO.

NO YES

### FldSeperator

The field separator deals with block page mode. When you press **ENTER** in block page mode and display memory contains a formatted display, the terminal automatically transmits the specified field separator at the end of each unprotected field (except the final one). To define the field separator, position the cursor, turn on **DISPLAY FUNCTIONS**, type a character, then turn off **DISPLAY FUNCTIONS**.

### any ASCII Character

### BlockTerminator

The Block Terminator deals with terminal to host data transfers. Under certain circumstances, the specified block terminator character is transmitted at the end of a transfer ("copy" device control operations and **ENTER** key transmissions). To change the block terminator, position the cursor; press **DISPLAY KEYS**; type a character; turn off **DISPLAY KEYS**.

### any ASCII character

## AlternateSet

Your keyboard has an alternate set of characters; that is, by typing **CTRL** N, you can change the characters your keys produce ( **CTRL** O returns the standard). Line drawing is standard and the math set are standard.

**@** = Base set (language, such as USASCII)

**A** = MATH SET

**B** = LINE DRAWING

**B**      **@**      **A**

## Terminal ID

Terminal ID tells a host computer what kind of terminal to expect the HP 150 to respond as. At this time, the HP 150 is not fully recognized as a terminal by the HP 3000; any application using VIEW will not work properly. The entry 2623A, however, is fully recognized by the HP 3000.

**150A**    **2623A**

## Transmit

Transmit determines which fields will be transmitted to the host from the screen when you are in format mode. The default is all fields, but you can send only fields that have been modified if you wish.

**All Fields**    **Modified**

# Configuring MS-DOS

## How Do I See the Configuration Menu?

MS-DOS CONFIG must be one of the discs on your system. It is shipped on the operating system disc (SYS\_MASTER), but can be installed to any other disc with the INSTALL APPLIC program.

When the program is installed, MS-DOS appears in P.A.M. Touch MS-DOS Device Config on the P.A.M. screen.

This screen appears:

MS-DOS Device Configuration

Main

System Devices

	Interface	Address	Model	Print Wheel		Interface	Address
PRN:	HP-IB	1	82906A		PLT:	Port2	
LST:	Port2		2602A	USASCII	COM1:	Remote	
AUX:	Remote				COM2:	Port2	

Disc Drives

A:	Interface	Addr	Drive	E:	Interface	Addr	Drive	I:	Interface	Addr	Drive
	HP-IB	0	0		No Device				No Device		
B:	HP-IB	0	1	F:	No Device			J:	No Device		
C:	HP-IB	2	0	G:	No Device			K:	No Device		
D:	No Device			H:	No Device			L:	No Device		

Previous Choice

Next Choice

Save Config

Default Values

Active Values

Exit CONFIG

Num Pad 12:00

# What Do the Configuration Entries Mean?

The MS-DOS configuration is divided into two parts, system devices (printers, plotters, computers) and disc drives.

## System Devices

### PRN

Where is your primary printer connected? Is it on the HP-IB port (if so, what is the address?), on Port 1, on Port 2, is it an internal printer or should it take the Serial value set in the Global Configuration entry Remote/Serial Dev?

HP-IB (Address)	Port 1	Port 2	Internal	Serial
-----------------	--------	--------	----------	--------

### Model

What model is your printer? This entry cycles between:

2601A, 2602A, 2674A, 2932A, 2924A, 82905B, 82906A, other, and special.

### Print Wheel

If you have a daisy wheel printer, what print wheel are you using? This entry cycles between:

French, German, Italian, Legal, Norsk, Spanish, Swedish, WP and USACII.

### LST

If you have a second printer, where is that printer connected? Is it on the HP-IB port (if so, what is the address?), on Port 1, on Port 2, is it an internal printer, or should it take the Serial value you set the Global Configuration entry Remote/Serial Dev to be?

HP-IB (Address)	Port 1	Port 2	Internal	Serial
-----------------	--------	--------	----------	--------

### AUX

If you have an auxiliary device (such as a digitizer, modem, or RS232 printer or plotter), is it connected to the HP-IB port, Port 1, Port 2, is it internal, or should it take the Serial or Remote value set set in the Global Configuration entry Remote/Serial Dev?

Remote	HP-IB	Port1	Port2	Serial
--------	-------	-------	-------	--------



PLT

Where is your plotter connected? On the HP-IB port, Port 1, or Port 2 or should it take the Serial value set in the Global Configuration entry Remote/Serial Dev?

**Remote**   Port1   Port2   Serial

COM1

Where is your primary host computer connected? Is it on Port 1, Port 2, or should it take the Remote value set in the Global Configuration Remote/Serial Dev?

**Remote**   Port1   Port2

COM2

Where is your primary host computer connected? Is it on Port 1, Port 2, or should it take the Remote value set in the Global Configuration Remote/Serial Dev?

**Port1**   Port2   Remote

## Disc Drives

If a disc drive (such as disc drive A:) has the entry HP-IB, it is considered connected by MS-DOS. You must then choose an address ( 0-7 ) and drive number (0 or 1) with **Next Choice**. No Device means a drive is not connected for that letter.

**HP-IB**   No Device





# SETTING UP A DISC DRIVE

To set up your disc drive, you must first physically connect the equipment according to instructions in Chapter 2. The switches on the rear panel of your disc drive specify the location, or "address", to which the system processor transmits data.

Any time you wish to change the address or install an additional disc drive, you must:

1. change the MS-DOS Device Configuration Menu, AND
2. set the switches on the rear panel of your disc drive.

If you install a dual disc drive, you do not need to make any changes. Simply set the address switches as shown for your particular model. The system defaults to address 0, units 0 and 1 (drives A: and B:) for a dual flexible disc drive.

If you install a fixed disc drive with a flexible disc drive unit, follow the instructions below.

If you wish to install more than one disc drive, refer to the section below on "Configuring More Than One Disc Drive".

---

## NOTE

If you wish to install a standalone fixed disc drive or a single flexible disc drive, you must first install a disc drive with a flexible disc drive unit. The addresses depend on the disc drives installed, and examples are discussed in "Configuring More Than One Disc Drive".

---

## Installing a Fixed Disc Drive with a Flexible Disc Drive Unit

If you wish to install a fixed disc drive with a flexible disc drive unit, you must install your disc drive as follows:

1. The unit may be shipped with switch settings for the fixed disc set at address 0 and switch settings for the flexible disc unit set at address 2. Change the switch settings on the equipment so that the fixed disc is address 2 (drive C:) and the flexible disc unit is address 0 (drive A:).
2. Insert the diskette labeled SYS\_MASTER into drive A: (the flexible disc unit).
3. Format the fixed disc (drive C:). REMEMBER TO TOUCH **Copy System** IN ORDER TO COPY THE OPERATING SYSTEM AND P.A.M. TO YOUR FIXED DISC. In addition, install the remainder of the files on the SYS\_MASTER disc and the DISC\_MASTER disc to your fixed disc.
4. Remove your discs and turn the power switches OFF on both your system processor and the disc drive.
5. Change the switch settings so that your fixed disc is now drive A: (address 0) and the flexible disc unit is drive C: (address 2). Your system processor will now boot from your fixed disc drive.

If you wish to set up your disc drive so that the fixed disc is drive A: and the flexible disc unit is drive B:, you must:

1. Verify that the switch settings on your disc drive are set so that the fixed disc is address 0 and the flexible disc unit is address 2.
2. Access the MS-DOS Device Configuration Menu and change the DISC DRIVES section of the Menu as follows:

(Tab to the fields you wish to change, then use **Previous Choice** or **Next Choice** to make your selection. When you complete your selection, touch **Save Config**, then **Exit CONFIG** to return to the P.A.M. screen.)

MS-DOS Device Configuration										Main	
System Devices											
FRN:	Interface	Address	Model	Print Wheel		PLT:	Interface	Address			
	HP-IB	1	82906A				Port2				
LST:	Port2		2602A	USASCII		COM1:	Remote				
AUX:	Remote					COM2:	Port2				
Disc Drives											
A:	Interface	Addr	Drive	E:	Interface	Addr	Drive	I:	Interface	Addr	Drive
	HP-IB	0	0		No Device				No Device		
B:	HP-IB	2	0	F:	No Device			J:	No Device		
C:	No Device			G:	No Device			K:	No Device		
D:	No Device			H:	No Device			L:	No Device		
		Previous Choice	Next Choice	Save Config	1	1	Default Values	Active Values	Exit CONFIG		
				Num Pad	0:09						

## Configuring More Than One Disc Drive

As your needs increase due to more files or more applications, you may wish to add another disc drive. Some examples are provided below to help you configure the disc drives to your system.

## Adding a Standalone Fixed Disc Drive

You may add a standalone fixed disc drive to a dual flexible disc drive. The standalone fixed disc drive may be configured either as a mass storage device (drive C:) or as the primary disc drive (drive A:).

To install the standalone fixed disc drive, you must first:

- connect a dual flexible disc drive to the system processor, AND
- install the Operating System and applications, including the MS-DOS Config application on the dual flexible disc drive.

After you install the first disc drive, follow the steps below to install the standalone fixed disc drive:

1. Verify that the switch setting for the fixed disc drive is address 2 (drive C:) and that the dual flexible disc drive is set to address 0 (drive A:). (A dual flexible disc drive defaults to address 0, units 0 and 1, or drives A: and B:.)
2. Insert the diskette labeled SYS\_MASTER into drive A: (the flexible disc unit).
3. Format the fixed disc (drive C:).

---

### NOTE

If you wish to use the standalone fixed disc as the primary disc drive, you must touch **Copy System** before you format the fixed disc. This step installs the operating system and P.A.M. to your standalone fixed disc.

In addition, you should install the remainder of the files on the SYS\_MASTER disc and the DISC\_MASTER disc to your fixed disc.

- 
4. Remove your discs and turn the power switches OFF on your system processor and the disc drives.



If you wish to use the standalone fixed disc as mass storage only, your personal computer is ready to use when this step is completed.

If you wish to use your standalone fixed disc drive as the primary drive, you must:

1. Change the switch settings on your fixed disc drive to address 0 and on the dual flexible disc drive to address 2.
2. Access the MS-DOS Device Configuration Menu and change the DISC DRIVES section of the Menu as follows:

(Tab to the fields you wish to change, then use **Previous Choice** or **Next Choice** to make your selection. When you complete your selection, touch **Save Config**, then **Exit CONFIG** to return to the P.A.M. screen.)

MS-DOS Device Configuration
Main

System Devices

	Interface	Address	Model	Print Wheel		Interface	Address
PRN:	HP-IB	1	81906A		PLT:	Port2	
LST:	Port2		2602A	USA5011	COM1:	Parote	
AUX:	Remote				COM2:	Port2	

Disc Drives

	Interface	Addr	Drive		Interface	Addr	Drive		Interface	Addr	Drive
A:	HP-IB	0	0	E:	No Device			I:	No Device		
B:	HP-IB	2	0	F:	No Device			J:	No Device		
C:	HP-IB	2	1	G:	No Device			K:	No Device		
D:	No Device			H:	No Device			L:	No Device		

Previous Choice

Next Choice

Save Config

1

1

Default Values

Active Values

Exit CONFIG

Num Pad      0:10

## Adding a Fixed Disc Drive (with a Flexible Disc Drive Unit) to a Dual Disc Drive

You may already have a dual disc drive (perhaps using 5-1/4" discs) and would like to add a flexible disc drive which incorporates a flexible disc drive unit (perhaps using 3-1/2" discs).

For purposes of this example, the fixed disc drive with its flexible disc drive unit is designated as the primary drive. The units are configured as follows:

1. Follow instructions under "Installing a Fixed Disc Drive with a Flexible Disc Drive Unit" to install the disc drive. Verify that the address switches are set to address 0 for the fixed disc drive and to address 2 for the flexible disc drive unit.
2. For the dual flexible disc drive unit, set the switches to address 3. (Refer to the back of this Appendix for switch settings.)
3. Access the MS-DOS Device Configuration Menu and change the DISC DRIVES section of the Menu as follows:

(Tab to the fields you wish to change, then use **Previous Choice** or **Next Choice** to make your selection. When you complete your selection, touch **Save Config**, then **Exit CONFIG** to return to the P.A.M. screen.)

MS-DOS Device Configuration

Main

System Devices

	Interface	Address	Model	Print Wheel		Interface	Address
PRN:	HP-IB	1	82906A		PLT:	Port2	
LST:	Port2		2602A	USASCII	COM1:	Remote	
AUX:	Remote				COM2:	Port2	

Disc Drives

	Interface	Addr	Drive		Interface	Addr	Drive		Interface	Addr	Drive
A:	HP-IB	0	0	E:	No Device				I:	No Device	
B:	HP-IB	2	0	F:	No Device				J:	No Device	
C:	HP-IB	3	0	G:	No Device				K:	No Device	
D:	HP-IB	3	1	H:	No Device				L:	No Device	

Previous Choice

Next Choice

Save Config

1

Default Values

Active Values

Exit CONFIG

Num Pad 0:11

## Adding a Single Flexible Disc Drive

You may add a single flexible disc drive to either a fixed disc drive with a flexible disc drive unit, or to a dual flexible disc drive.

If you add a single flexible disc drive to a dual flexible disc drive:

1. You do not need to make any changes to the MS-DOS Device Configuration Menu.
2. Simply change the switch settings on the single flexible disc drive to address 2 (drive C:). The system defaults to address 0, units 0 and 1 (drives A: and B:) for a dual flexible disc drive.

If you add a single flexible disc drive to a fixed disc drive which has a flexible disc drive unit, you must:

1. Change the switch setting on the single flexible disc drive to address 3 (drive C:).
2. Access the MS-DOS Device Configuration Menu and change the DISC DRIVES section of the Menu as follows:

(Tab to the fields you wish to change, then use **Previous Choice** or **Next Choice** to make your selection. When you complete your selection, touch **Save Config**, then **Exit CONFIG** to return to the P.A.M. screen.)

MS-DOS Device Configuration										Main		
System Devices												
PRN:	Interface	Address	Model	Print Wheel	PLT:	Interface	Address					
LST:	Port2		2802A	USA5011	COM1:	Remote						
AUX:	Remote				COM2:	Port2						
Disc Drives												
A:	Interface	Addr	Drive	E:	Interface	Addr	Drive	I:	Interface	Addr	Drive	
B:	HP-IB	0	0	F:	No Device				J:	No Device		
C:	HP-IB	2	0	G:	No Device				K:	No Device		
D:	HP-IB	3	0	H:	No Device				L:	No Device		
Previous Choice   Next Choice   Save Config   1   1   Default Values   Active Values   Exit CONFIG												
Num Pad   0:12												



# SETTING UP A PRINTER

In order for your personal computer to transmit data to your printer, it must first know where your printer is located (it's "address", as well as the interface used).

This information is required whether you use an HP-IB cable or an RS-232 cable to connect your printer to the system processor. You supply this information in the MS-DOS Device Configuration Menu, described earlier.

---

## NOTE

To access this menu, you must first:

- connect a disc drive and your printer to the system processor,  
AND
  - install the Operating System and applications, including the MS-DOS Config application.
- 

To access the MS-DOS Device Configuration Menu, proceed as follows:

1. Boot your system to display the P.A.M. screen.



2. Touch Device CONFIG to display the following Menu:

MS-DOS Device Configuration

Main

System Devices

	Interface	Address	Model	Print Wheel		Interface	Address
PRN:	HP-IB	1	82906A		PLT:	Port2	
LST:	Port2		2602A	USASCII	COM1:	Remote	
AUX:	Remote				COM2:	Port2	

Disc Drives

	Interface	Addr	Drive		Interface	Addr	Drive		Interface	Addr	Drive
A:	HP-IB	0	0	E:	No Device			I:	No Device		
B:	HP-IB	0	1	F:	No Device			J:	No Device		
C:	HP-IB	2	0	G:	No Device			K:	No Device		
D:	No Device			H:	No Device			L:	No Device		

Previous Choice

Next Choice

Save Config

1 1

Default Values

Active Values

Exit CONFIG

Num Pad 0:13

NOTE

If your printer is listed on the screen, you do not need to make any changes to this Menu. Simply touch **Exit CONFIG** to return to the P.A.M. screen.

For example, if you wish to use a faster dot matrix printer (such as the HP 82906A) as well as a letter quality printer (such as the HP 2602A), your MS-DOS Device Configuration Menu does not need to be changed. (The HP 82906A printer is connected with an HP-IB cable and the HP 2602A printer is connected with an RS-232 cable to Port 2.)

3. If you wish to use a printer other than one listed in the Menu, simply touch the field you wish to change. To select another printer, touch **Previous Choice** or **Next Choice** until the printer you wish to use appears in the field.

For example, if you wish to use both a letter quality printer (such as the HP 2602A) and the HP 2674A Internal Printer, the MS-DOS Device Configuration Menu should look like this:

MS-DOS Device Configuration										Main	
System Devices											
	Interface	Address	Model	Print Wheel		Interface	Address				
PRN:	Interna.		2674A			PLT:	Port2				
LST:	Port2		2602A	USASCII		COM1:	Remote				
AUX:	Remote					COM2:	Port2				
Disc Drives											
	Interface	Addr	Drive		Interface	Addr	Drive		Interface	Addr	Drive
A:	HP-IB	0	0		E:	No Device			I:	No Device	
B:	HP-IB	0	1		F:	No Device			J:	No Device	
C:	HP-IB	2	0		G:	No Device			K:	No Device	
D:	No Device				H:	No Device			L:	No Device	
	Previous Choice	Next Choice	Save Config	1	1	Default Values	Active Values		Exit CONFIG		
			Num Fnd	0:14							

- When you complete your selection, touch **Save Config**, then **Exit CONFIG** to return to the P.A.M. screen.

## For Printers Using an RS-232 Cable

If you use an RS-232 cable to connect your printer to the system processor, you must not only tell your computer the location of your printer but how the printer receives data (speed, etc.). Since the RS-232 cable from your printer is connected to Port 2, access the Port2 Configuration Menu as follows:

- Press **User System** twice on the keyboard, and the following function keys are displayed:

Device Control	Margins Tabs/Col	Service Keys		Enhance Vidio	Define Fields	Set Time	Config Keys
----------------	------------------	--------------	--	---------------	---------------	----------	-------------

2. Touch **config keys** and the function keys change as follows:

Global Config   Port1 Config   Port2 Config   Terminal Config   Accessory Config

3. Touch **port2 config**. The following menu is displayed (showing default values):

FULL DUPLEX HARDWIRED

Port 2

BaudRate	2400	Parity	0's	DataBits	7	Clock	24.7
Asterisk	Off	Stop Bits	1	EnqAck	Yes		
TR(CD)	Hi	Check Parity	No	SR(CH)	Lo		
RecvPace	None	SRRXmit	1's	RR(CF)Recv	1's		
XmitPace	None	SRRInvert	1's	CS(CB)Xmit	1's	DM(CC)Xmit	1's

SAVE CONFIG   NEXT CHOICE   PREVIOUS CHOICE   system defaults   3   10   0:03

config menus   DISPLAY FUNCTNS   config keys

Since data transmission to each printer varies, sample configuration menus are provided below for each printer using an RS-232 cable. Use **Previous Choice** or **Next Choice** to select the areas highlighted.

When you complete your selection, touch **Save Config**. You will be returned to the MS-DOS Device Configuration Menu. (If you wish to return to the P.A.M. screen, touch **Exit CONFIG**.)

#### NOTE

Since the HP 2674A printer uses an internal cable only, no action is required. Refer to the next section in this Appendix for information on using advanced printer functions for the HP 2674A Internal Printer.

## Configuration for the HP 2601A and HP 2602A Daisywheel Printers:

FULL DUPLEX HARDWIRED				Port 2	
BaudRate	1200	Parity	0's	DataBits	7
Asterisk	Off	Stop Bits	1	EngAck	No
TR(CD)	Hi	Check Parity	No	SR(CH)	No
RecvPace	None	SRRXmit	No	RR(CF)Recv	No
XmitPace	Xon Xoff	SRRInvert	No	CS(CB)Xmit	No
				DM(CC)Xmit	No
<div>SAVE CONFIG</div> <div>NEXT CHOICE</div> <div>PREVIOUS CHOICE</div> <div>system defaults</div>		<div>3 44</div> <div>0:06</div>		<div>config menus</div> <div>DISPLAY FUNCTIONS</div> <div>config keys</div>	

## Configuration for the HP 293X Dot Matrix Printer Family:

FULL DUPLEX HARDWIRED				Port 2	
BaudRate	2400	Parity	None	DataBits	8
Asterisk	Off	Stop Bits	1	EngAck	No
TR(CD)	Hi	Check Parity	No	SR(CH)	No
RecvPace	None	SRRXmit	No	RR(CF)Recv	No
tPace	Xon Xoff	SRRInvert	No	CS(CB)Xmit	No
				DM(CC)Xmit	No
<div>SAVE CONFIG</div> <div>NEXT CHOICE</div> <div>PREVIOUS CHOICE</div> <div>system defaults</div>		<div>3 10</div> <div>0:05</div>		<div>config menus</div> <div>DISPLAY FUNCTIONS</div> <div>config keys</div>	



Configuration for the HP 82905B Dot Matrix Serial Printer:

FULL DUPLEX HARDWIRED

Port 2

BaudRate4800

ParityNone

DataBits8

ClockINT

AsteriskOff

Stop Bits1

EnqAckNo

TR(CD)Hi

Check ParityNo

SP(CH)Lo

RecvPaceNone

SPPXmitNo

RR(CF)RecvNo

XmitPaceXon\off

SPPInvertNo

CS(CB)XmitNo

DM(CC)XmitNo

SAVE  
CONFIG

NEXT  
CHOICE

PREVIOUS  
CHOICE

system  
defaults

810

config  
menus

DISPLAY  
FUNCTNS

config  
keys

0:04



## **Advanced Control of the HP 2674A Internal Printer**

The internal printer is usually controlled by either touching the screen or pressing a function key on the keyboard. However, printer functions may also be controlled by special character sequences called control codes or escape sequences.

An escape sequence is sent to the internal printer from a program executing in the HP 150. These special characters are not printed, but are used to instruct the internal printer how to print the information that follows the escape sequence.

For example, the special characters in the escape sequence shown below are not printed but instruct the internal printer to print in a compressed mode.

ESC &k2S

The following control codes and escape sequences are used with the HP 2674A Internal Printer:

### **Control Codes**

LF	Line Feed
FF	Form Feed
CR	Carriage Return
SO	Shift Out of Primary Character Set to Secondary
SI	Shift Into Primary Character Set from Secondary
ESC	Escape
SP	Space

### **Specialized Printer Control**

ESC E	Hard Reset (Returns printer to power-on state)
ESC z	Self Test

### **Display Functions**

ESC Y	Turn on Display Functions Mode (prints most control codes rather than executing them)
ESC Z	Turn off Display Functions Mode

## Underlining Mode

ESC &dD	Turn on underline
ESC &d@	Turn off underline

## Vertical Pitches

ESC &l0L	Disable Auto Page Mode (power-on default)
ESC &l1L	Enable Auto Page Mode
ESC &l6D	Print 6 lines/inch (power-on default)
ESC &l8D	Print 8 lines/inch (approximately 7.5 lines/inch)

## User Definable Page Length

ESC &l#P	Where # = the number of lines per page (<129) (Text length is 1 inch less than page length; power-one default is 66 lines.)
----------	--

## Primary Character Set Selection

Primary Character Set is always Roman8

## Secondary Character Set Selection

ESC )B or ESC )0L or ESC )L	Line Draw Set (power-on default - use 8/lines/inch)
ESC )A or ESC )9M or ESC )M	Math Symbols Set
ESC )E or ESC )0E or ESC )E	Roman Extension Set*
ESC )8U	Roman8*

---

### NOTE

\*Print style is selectable.

---

### **Print Style Selection** (where # equals: 1 = ON, 0 = OFF)

ESC (s#B	Bold (primary character set)
ESC )s#B	Bold (secondary character set)

### **Raster Graphics Dump**

ESC *rA	Prepare for raster data
ESC *b#W[data]	Raster data transfer (where # = the number of bytes to be transferred)
ESC *rB	Raster graphics complete

### **Print Mode Selection**

ESC &k0S	Print 10 characters/horizontal inch (power-on default)
ESC &k2S	Print 16.4 characters/horizontal inch (compressed)







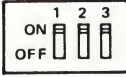

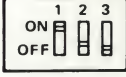

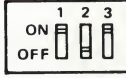
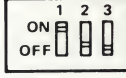









### **Transparent Print Data**

ESC &p#X	where # = the number of bytes to be printed. This function is similar to display functions EXCEPT all characters are printed and not acted upon (including CR, LF and ESC Z) for a specific number of bytes.
----------	---


















# Switch Settings

## DISC DRIVE SETTINGS

Disc Drive	Description	HP-IB Address Switch Settings		
		0	2	3
9121D	3.5" Dual Drive			
9121S	*3.5" Single Drive			
82901M	5.25" Dual Drive			
82902M	*5.25" Single Drive			
9133A	5 Mb Fixed Disc Drive with a 3.5" Micro Disc Drive			
9133B	10 Mb Fixed Disc Drive with a 3.5" Micro Disc Drive			
9133V	5 Mb Fixed Disc Drive (small footprint) with a 3.5" Micro Disc Drive			



Disc Drive	Description	HP-IB Address Switch Settings		
		0	2	3
9133XV	15 Mb Fixed Disc Drive (small footprint) with a 3.5" Micro Disc Drive			
9134A	*5 Mb Fixed Disc			
9134B	*10 Mb Fixed Disc Drive			
9134XV	*15 Mb Fixed Disc Drive			
9135A	5 Mb Fixed Disc Drive with a 5.25" Mini Disc Drive			

#### NOTE

\*These drives are supported as an "add-on" drive only to drives with 3.5" or 5.25" flexible disc drive.

## PRINTER ADDRESS SETTINGS

HP-IB Printer	Description	HP-IB Printer Address Switch Setting "1"
------------------	-------------	---

2602A	Daisywheel Serial Printer	
-------	---------------------------	--



2932A	Dot Matrix Serial Printer	*
-------	---------------------------	---

2934A	Dot Matrix Serial Printer	*
-------	---------------------------	---

82905B	Dot Matrix Serial Printer	
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82906A	Dot Matrix Serial Printer	
--------	---------------------------	--



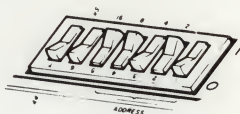
### NOTE

\*Refer to the printer reference manual for instructions on electronically configuring these models for an RS-232 connection. An HP-IB connection requires no changes.

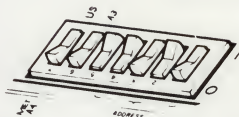
# PLOTTER ADDRESS SETTINGS

HP-IB Plotter	Description	HP-IB Plotter Address Switch Setting "5"
------------------	-------------	---

7470A	Two-Pen Plotter	
-------	-----------------	--

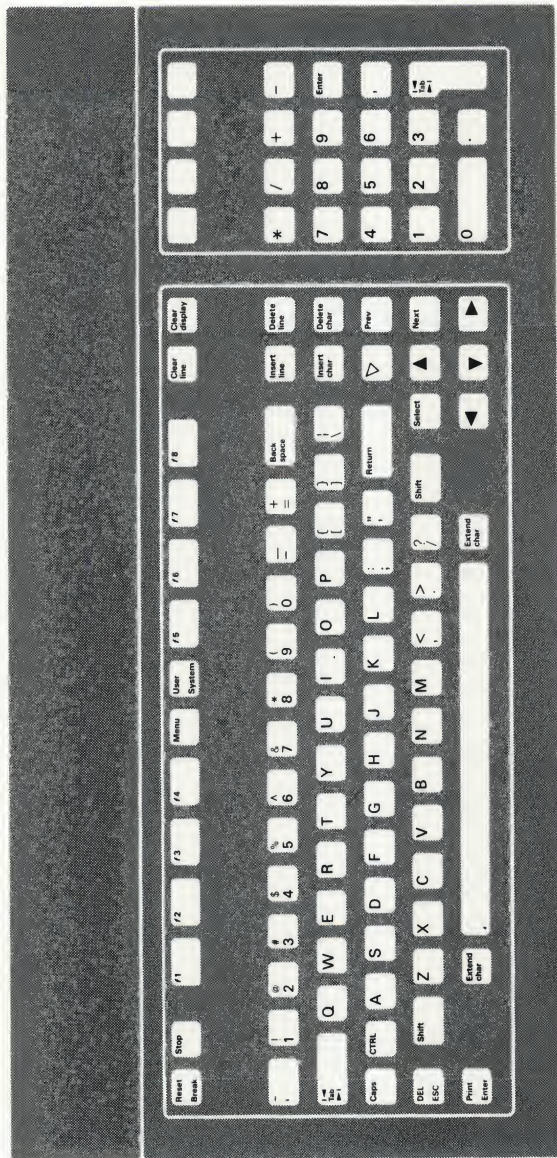


7475A	Six-Pen Plotter	
-------	-----------------	--



# USASCII Keyboard

If you have a U.S. version of the HP 150, you have a United States, ASCII keyboard. This keyboard looks like this:








## Math Symbol Set

Press    (enhance video),  (etc.),  (CHANGE TO MATH).

You are now using the Math Keyboard Set:

Not available at this time.

Return to your USASCII set by pressing  (etc.),  (CHANGE TO BASE),    (enhance video),



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## **Appendix B**

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## **KEYBOARDS**

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## Line Drawing Set

Press ,  (**enhance video**),  (**etc.**),  (**CHANGE TO LINE**).

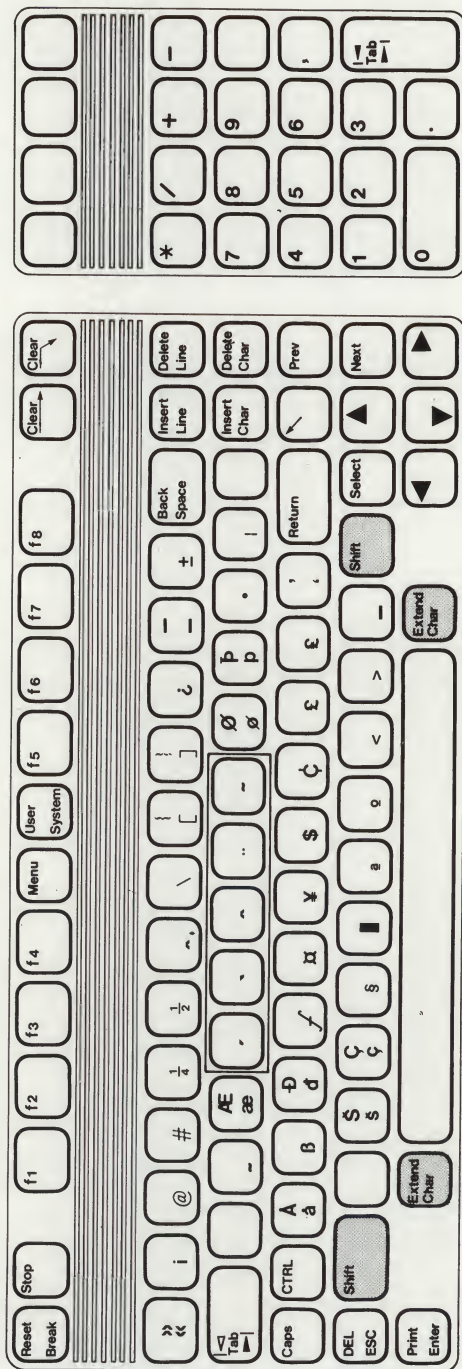
You are now using the Line Drawing Set:

Not available at this time.

Return to your USASCII keyboard by pressing ,  (**CHANGE TO BASE**),  (**etc.**), , .

## Roman 8 Foreign Character Keyboard Set

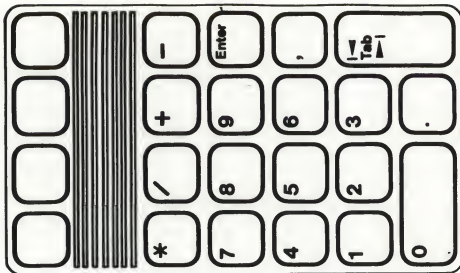
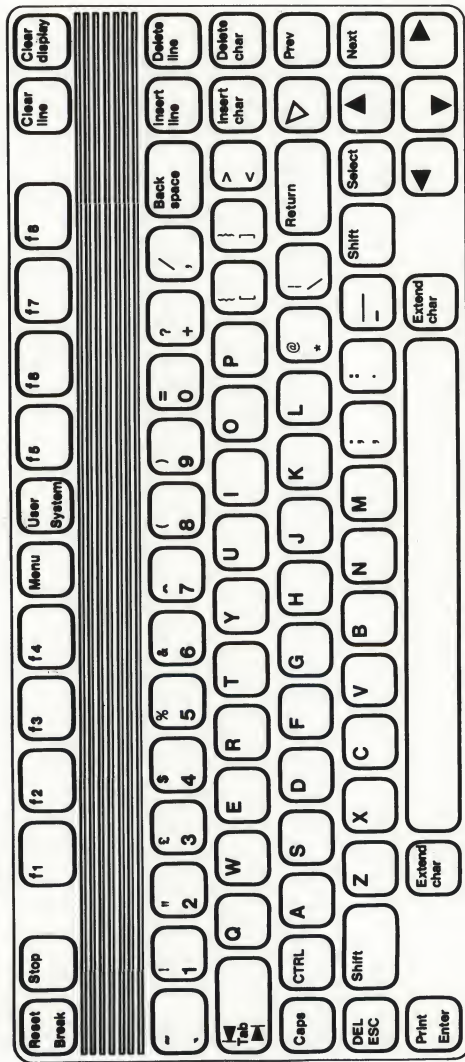
If you are typing a letter, and want to create an occasional foreign character symbol, press **Ext Char** and a key to create these symbols:



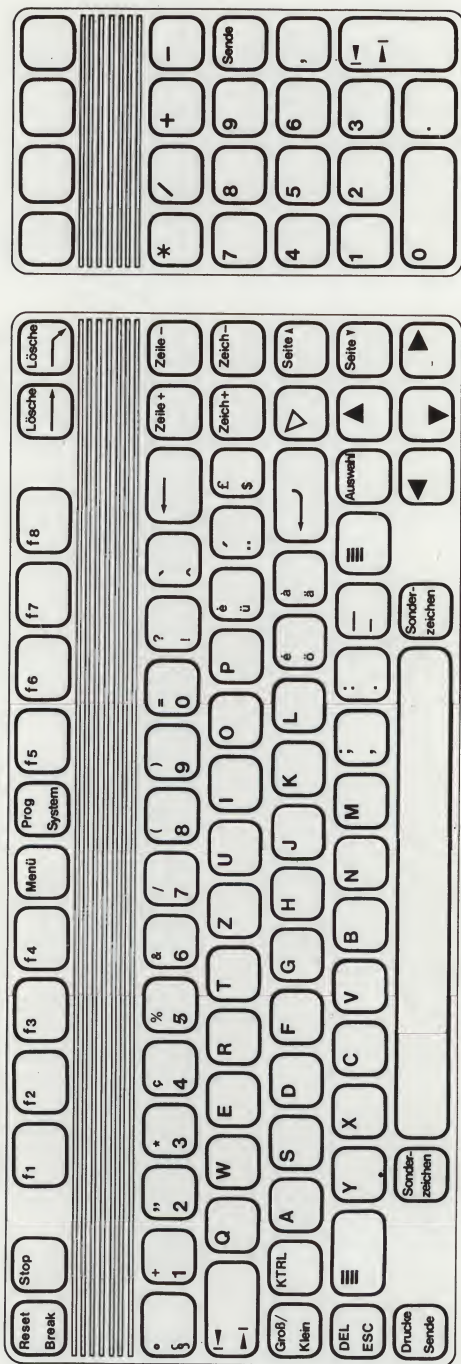
# Foreign Keyboards

You have the option of choosing any keyboard supported by Hewlett-Packard. An entry in the Global Configuration Menu (Keyboard) lets you do this.

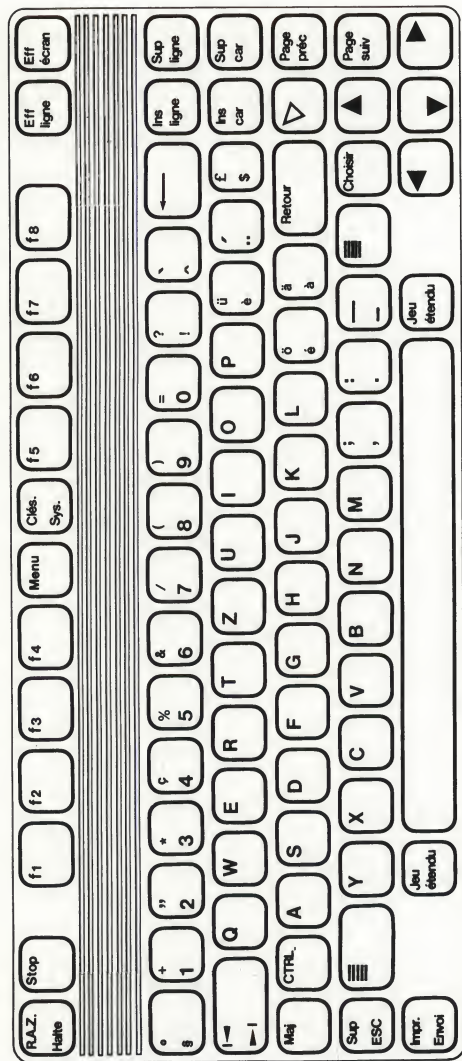
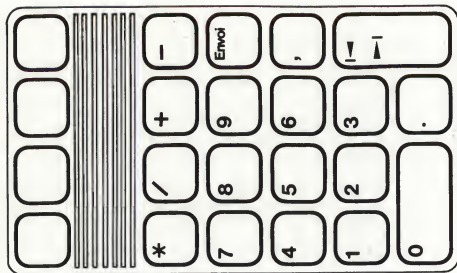
## United Kingdom



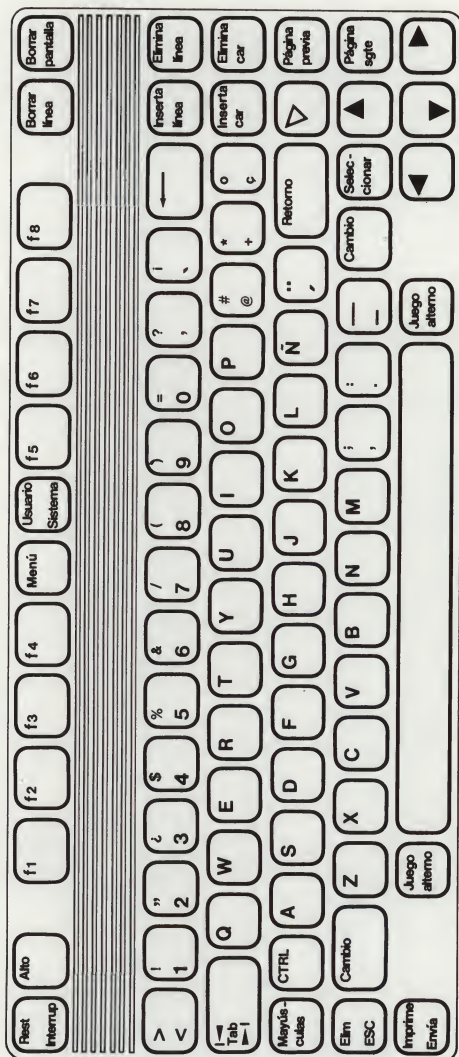




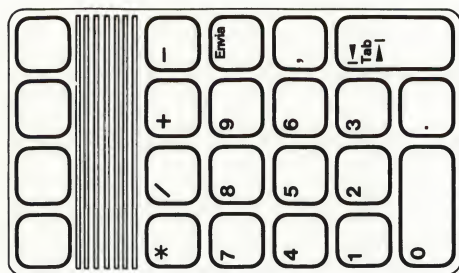
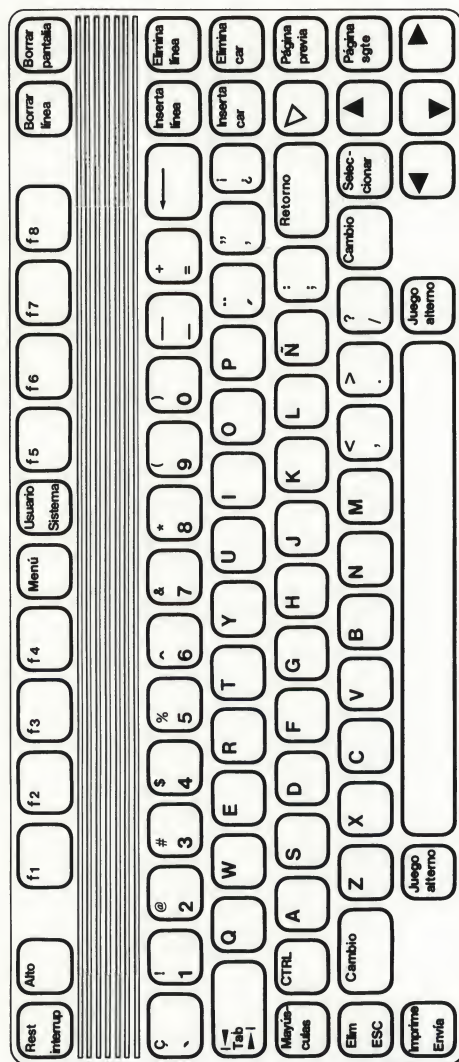
## Swiss French



# European/Spanish Keyboard



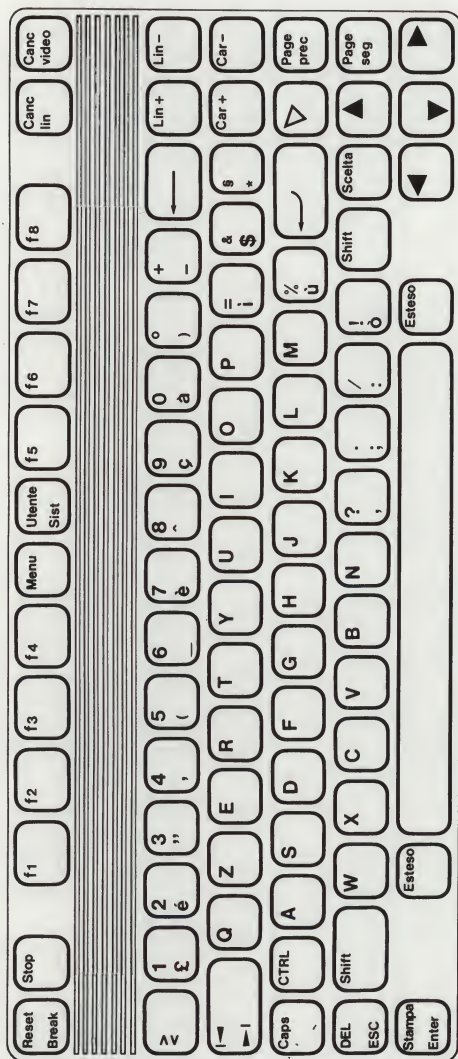
# Latin/Spanish





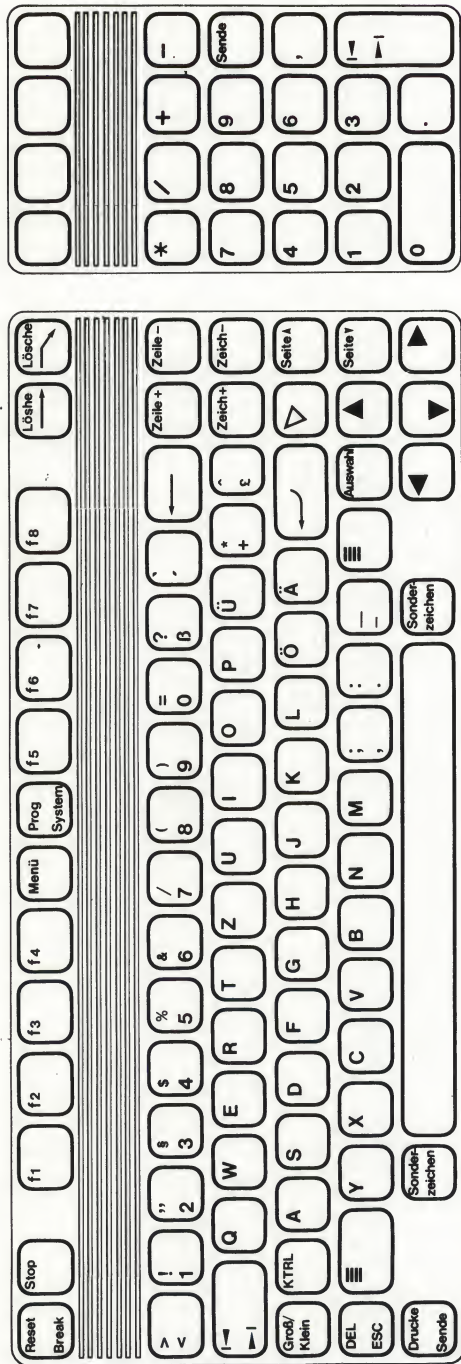
# Italian Keyboard

B-12



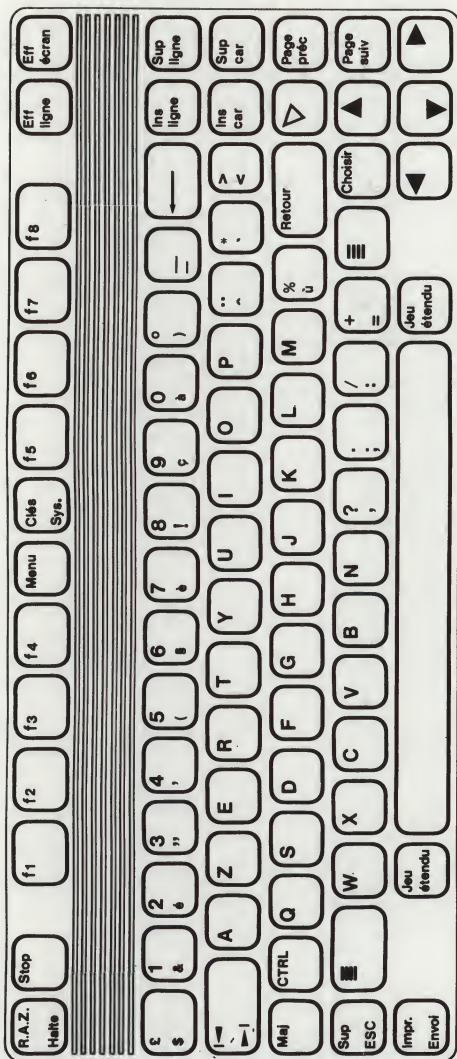


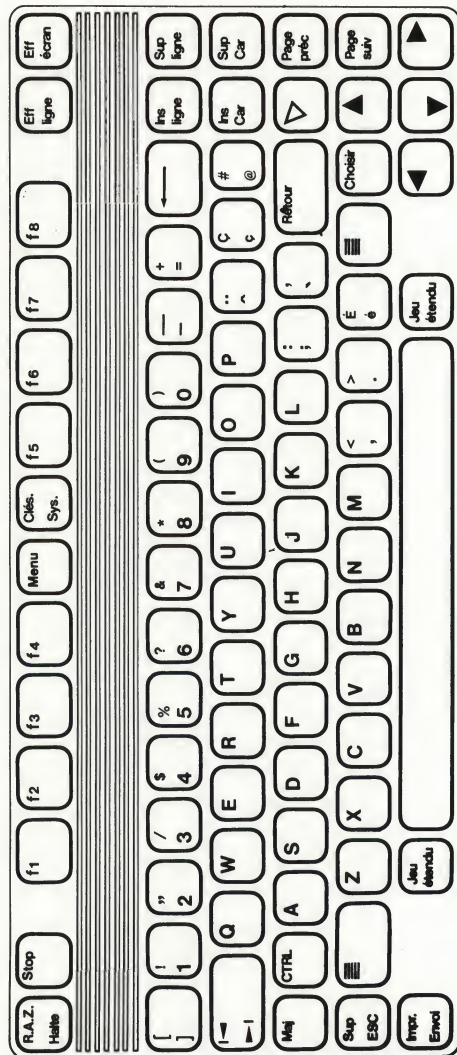
# German Keyboard



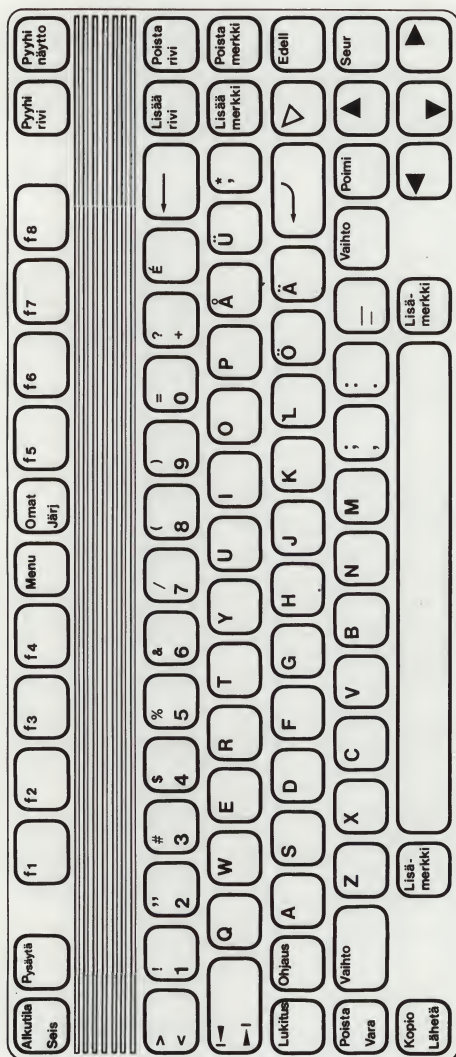
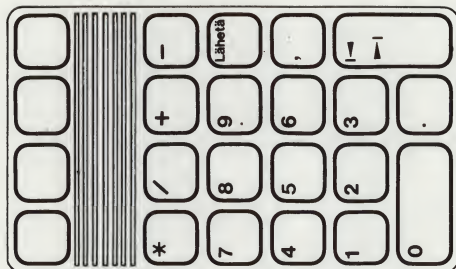
# French Keyboard

B-14



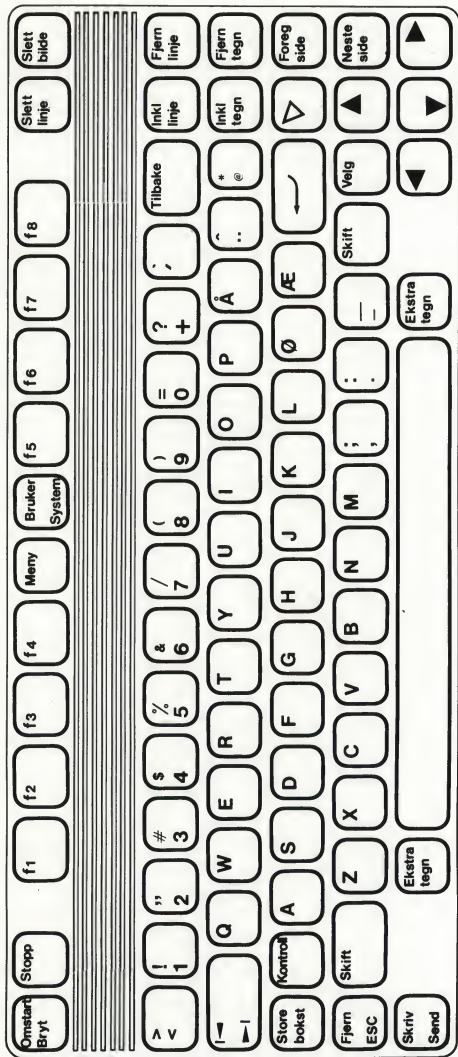
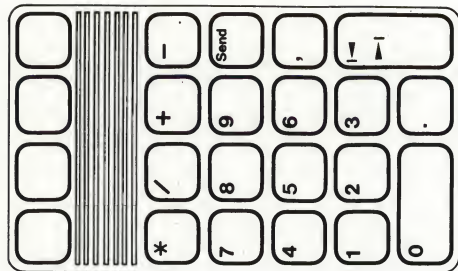


## Finnish Keyboard

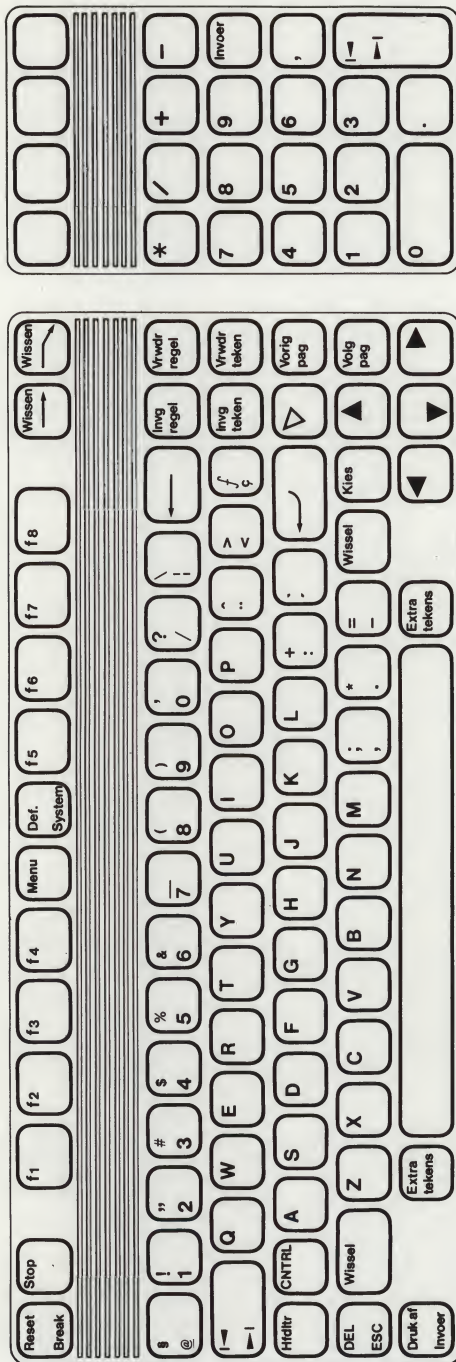




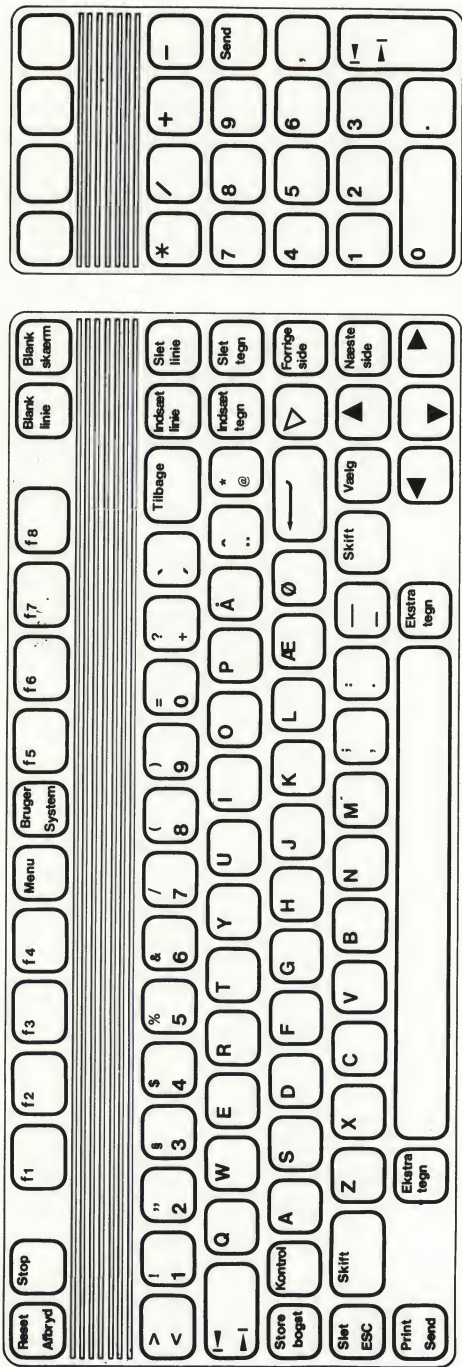
## Norwegian Keyboard



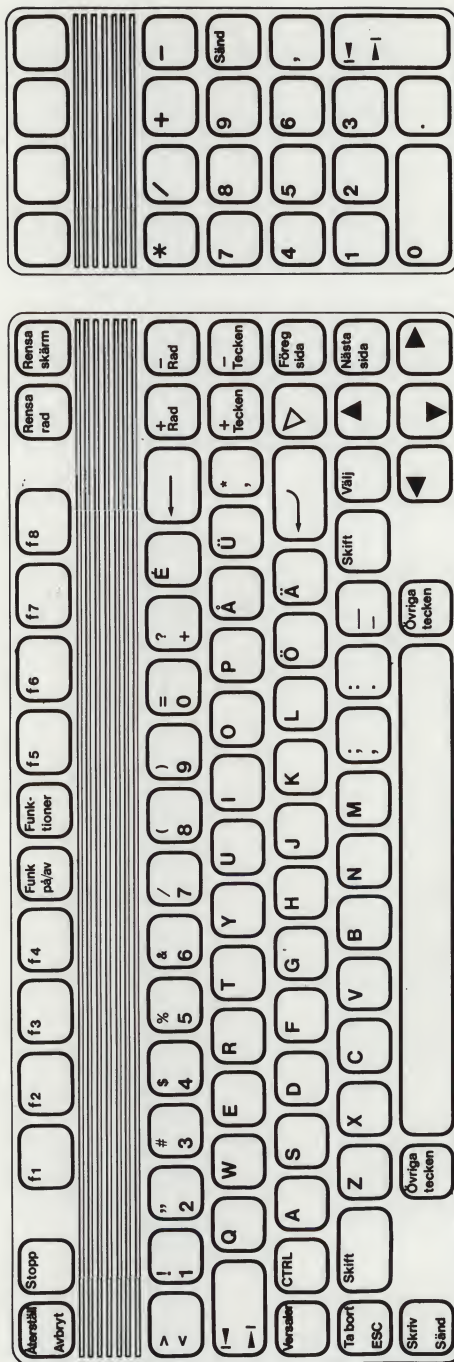




## Danish Keyboard



## Swedish Keyboard



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## **Appendix C**

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### **TAKING CARE OF THE HP 150**

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## **Operating Recommendations**

Operating Recommendations covers the requirements for the area in which your computer system will operate (its environment), as well as electrical considerations. If these recommendations are observed, your system should last longer, operate more reliably, and need fewer repairs.

### **Environment**

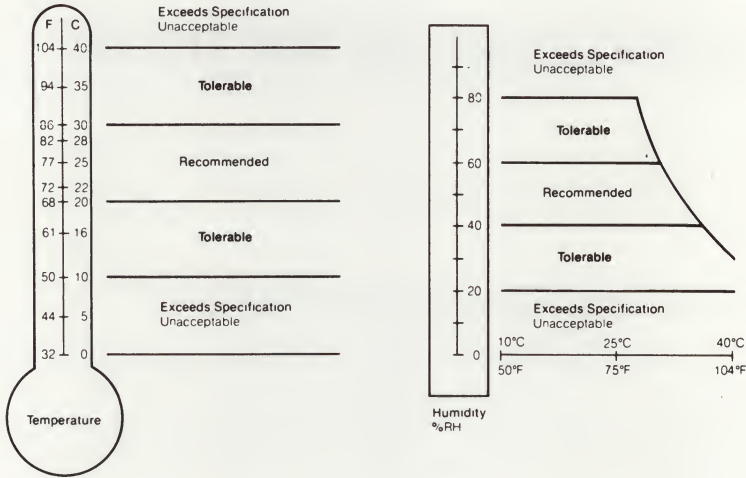
Fundamental safeguards for the computer system include a location within a building that will be away from sources of potential damage.

The HP 150 System should not be installed or operated in an area where there is a hazard of fire or explosion due to the existence of highly flammable gases, flammable volatile liquids, or combustible dust.



# Temperature and Humidity

Operating temperature and humidity requirements are shown in the following illustration:



The system will operate most reliably if the room temperature is maintained between 10 and 30 degrees Celsius (50 to 86 degrees Fahrenheit). Higher operating temperatures increase the failure rate of electronic circuitry.

Avoid extremes in relative humidity. High humidity levels can cause improper feeding and stacking of printer paper or improper operation of disc drives. Low humidity levels aggravate problems of static electricity and cause excessive flexible disc wear.

Carpeting can be a source of static electricity, especially in dry and cold climates. Static discharge can often be reduced significantly by a humidifier. Other ways to minimize static discharge include using mats (with a ground strap) in front of the system or treating the carpet with anti-static spray. Spray is not recommended, however, because it finds its way into the system and coats the circuitry. If spray is used, it should be applied while the system is turned off.



If the building air conditioning is turned down or off on weekends and you intend to use your system, we recommend you check the temperature and humidity of the computer site during a weekend to determine whether the operating specifications are exceeded. If the specifications are exceeded, you should provide auxiliary air conditioning to prevent system shutdown or damage to equipment. (An inexpensive thermometer and humidity gauge may be purchased at a hardware or department store to determine the temperature and humidity of your site.)

## **Electrical Considerations**

Take some time to observe the electrical aspects of the area in which you are installing your HP 150.

Are there electrical outlets close by? The HP power cords provided with your system are approximately 8 feet (2.4 meters) long.

Do not locate any connecting cables or power cords so that they cross entrances, aisles, other walkways or under carpeting. Cables located in any of those areas are prone to damage that increases the risk of fire and/or shock hazard.

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### **CAUTION**

**DO NOT USE EXTENSION CORDS UNDER ANY CIRCUMSTANCES.** Such use may result in data errors. Only multiple outlet strips which incorporate a circuit breaker are acceptable for use.

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All of the cables and power cords are attached at the rear of the computer system and peripherals. It is therefore recommended that you locate equipment along walls where power outlets are easily accessible and interconnecting cables will be out of the way.

## **Electrical Interference**

Power outlets for other electrical equipment (coffee makers, etc.) should be separate from the computer system's wall outlets. If separate wall outlets are not provided, operation of the equipment can cause electrical interference and abnormal operation of the computer system.

## **Circuit Breakers**

Separate circuit breakers for the system are suggested, but not required. There are two reasons for separate circuit breakers:

1. The first is to ensure that no other electrical devices are connected to the same circuit which prevents unnecessary tripping of a circuit breaker.

For example, if you brew coffee in an automatic coffee maker (12 amperes) at the same time as you are making toast in a toaster (10 amperes), you may trip the circuit breaker if both appliances are on the same circuit.

2. The second reason for dedicated circuits is to ensure that there is sufficient power to run the system. Lack of separate circuit protection and inadequate wiring may cause low voltage (insufficient power) and may cause intermittent system operation--system failures, disc errors, etc.

Circuit breakers are rated in amperes. In the U.S.A., typical circuit breakers are 15 or 20 amperes. The ampere load in each individual circuit breaker should allow a margin for startup and surge currents drawn by the system.

Power requirements for each component are labeled on the rear panel. Contact your local electric company to determine the voltage in your area. (In the U.S.A., the voltage should be set at 110 volts.)

## **Lightning**

In some geographical areas it may be advisable to install lightning protection for personnel and the computer. In the U.S.A., the installation of lightning arrestors on power and communication lines is described in the National Electrical Code, Article 280. The principles of lightning protection and personnel safety are given in the lightning protection code contained in the National Fire Protection Association (NFPA) Handbook.

## **Radio Interference**

Radio interference may cause a variety of problems in computer systems. Most commonly, disc read/write errors may occur.

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### NOTE

See the FCC statement in the front of this manual for more information.

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The most common sources of radio interference are airports (which have communications and radar installations), business two-way radio transmitters, or broadcast radio/TV transmitters. Hand-held transceivers (i.e., "walkie-talkies") produce the same effect as radio stations when used near computer equipment and should therefore be prohibited from the areas in which computer equipment is installed. Additionally, a microwave link aimed from adjacent buildings could present trouble for a computer system installed in its transmission path.

HP 150 Computer Systems are designed to withstand levels of interference up to 0.5 volt/meter over a frequency range of 14 KHz to 1 GHz.

If you think there could be a problem with radio interference at your site, you may need the assistance of an outside consultant for such measurements and recommendations on shielding the system from external interference. The person from whom you purchased your system may be able to recommend an electrical interference consultant in your area.

### Local Codes

In some localities, special codes and regulations may exist for computers. It is your responsibility to ensure that the requirements of all local laws, regulations, and codes for mechanical, building, and electrical distribution systems have been complied with for your area prior to the system delivery.

The Federal Communications Commission has prepared a booklet entitled "How to Identify and Resolve Radio - TV Interference Problems" which may be helpful to you. This booklet (stock # 004-000-00345-4) may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.



# Maintenance Recommendations

Your HP 150 is designed to perform for long periods of time with no maintenance on your part. However, you will occasionally need to change the battery or fuse, and clean the screen and keyboard. Also, when you first receive the HP 150 (or move it to another room), you need to check the screen to make sure that the touch feature is aligned correctly.

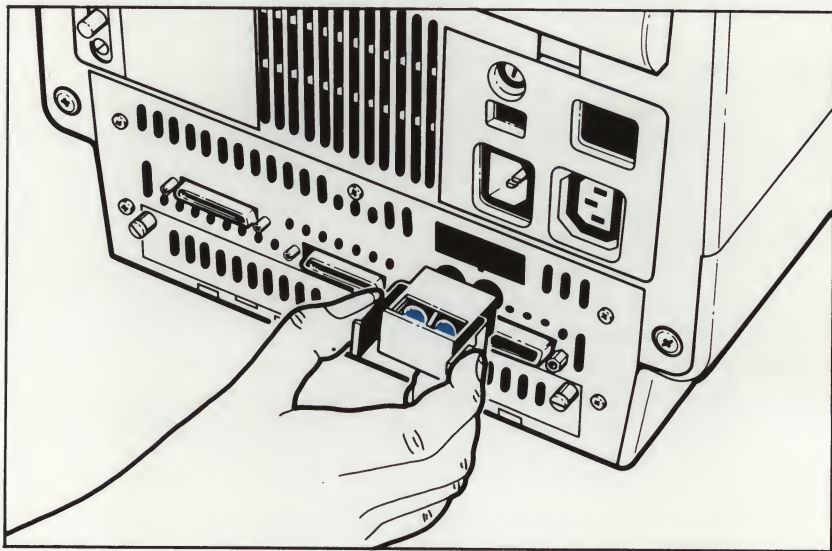
## Changing the Battery

The HP 150 runs on electricity; it does, however, have a battery backup. When you turn off the HP 150, the configuration menu settings (and the time on the clock) that you indicated are saved and maintained by the power in the battery.

The two batteries used in the HP 150 are 1.5 volt, size N. You can buy them yourself, or order them from HP; if you order them from HP, you receive Mallory Duracell 1.5 volt, N size batteries.

Batteries need to be replaced when the message **"Default Configs used"** appears after you either turn on the unit or press **CTRL** **SHIFT** **RESET**. This message means that the battery was too weak to hold your configuration menu settings, and all settings are now HP's defaults (they appear in the pictures in the appendix on Configuration).

Remove the battery holder as shown:



Look at the drawing on the side of the battery pack to see how the batteries should be placed in the holder. Insert the two batteries.

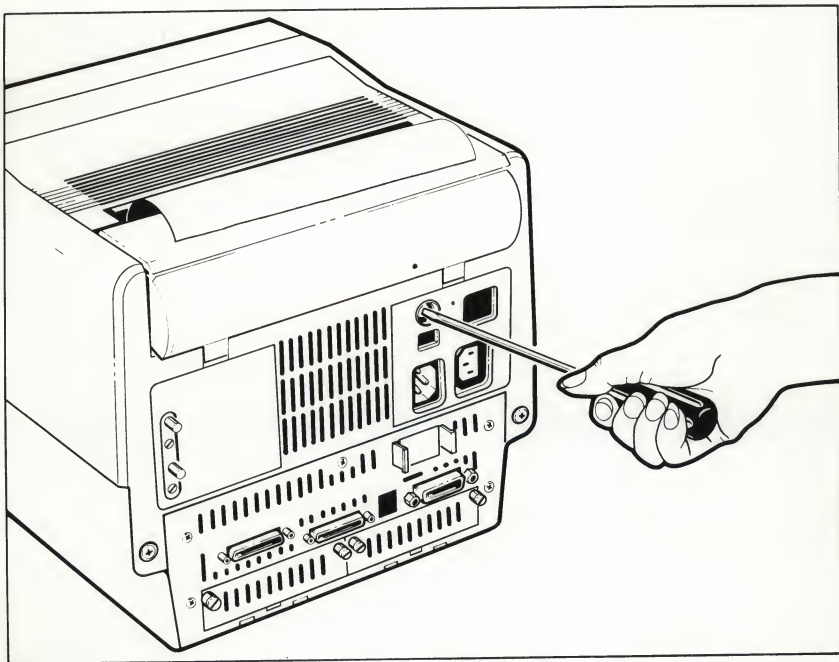
Line up the tab on the bottom of the holder with the groove on the slot. Reinsert the holder.

## Changing the Fuse

You have a fuse in your computer for the same reason you have a fuse in any other electrical appliance. If the computer draws too much current from the line, the fuse protects the computer from the surge of power.

You can tell that your fuse is blown or missing because your computer won't operate, even though the power cord is connected and the power outlet is working.

To change a fuse, turn the HP 150 off and remove the fuse holder as shown below:



Pull the holder straight back. Remove the fuse, and place a new fuse in the carrier. Push the holder back into the slot and turn it a quarter turn clockwise.



## Cleaning the Screen and Keyboard

Clean the display screen regularly to remove dust and fingerprints. Conventional spray cleaners are strong enough to clean your screen and keyboard; do not use petroleum based cleaners (such as lighter fluid), or cleaners containing benzene, trichlorethylene, ammonia, dilute ammonia or acetone as these chemicals could damage the system's plastic surfaces.





Avoid getting cleaner into the spaces between the keyboard or the touch screen holes around the screen. The best way to clean the screen and keyboard is to spray the cloth first, then wipe off the surfaces.





## Testing Procedures

The HP 150 has a number of test routines built into it. By using these programs, you can:

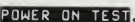
- Perform a power on test
- Align the touch screen
- Perform a system test
- Identify what version of ROMs you have
- Perform a datacommunications test
- Perform a memory test
- Test your internal printer (if you have one)

Press  twice, then  to see the test keys:

### Power On Test

The power-on test consists of several diagnostic tests, the results of which are meaningful to an HP Customer Engineer or other support engineer. These tests are performed every time you power-on the system, or when you press .

## Memory Test

The memory test takes about 5 minutes to check your memory. If the message **Memory test failed XXXX Press Return to clear** appears, write down the four numbers (XXXX). A support person will be able to interpret the code. If the message **Power-on test failed XXXX** appears, write down the four numbers (XXXX) that appear. A support person will be able to interpret this code.

## Screen Alignment

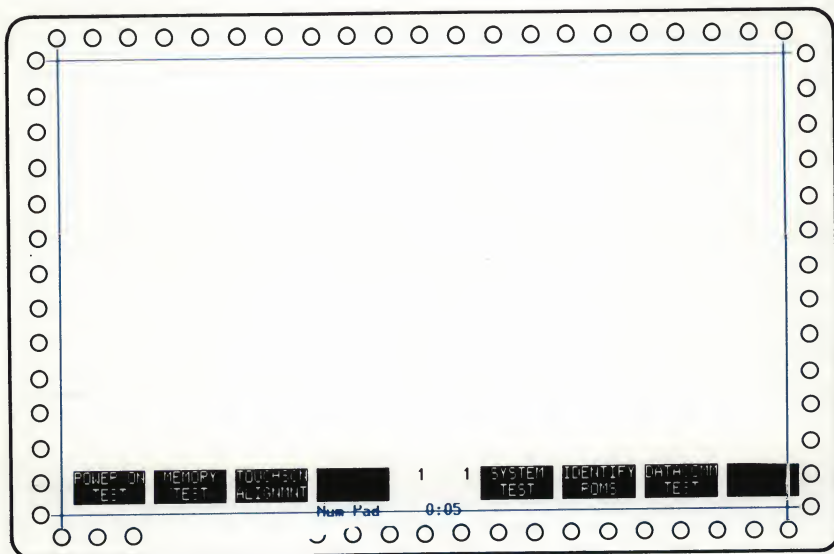
Touch screen works by sending signals between the small holes around the edge of the screen. If a field on the screen is not directly under the signal, touch screen will not work properly.

When an HP 150 is shipped (or even moved to another room), the screen is often jarred. Therefore, you should always check the screen alignment after an HP 150 is moved.

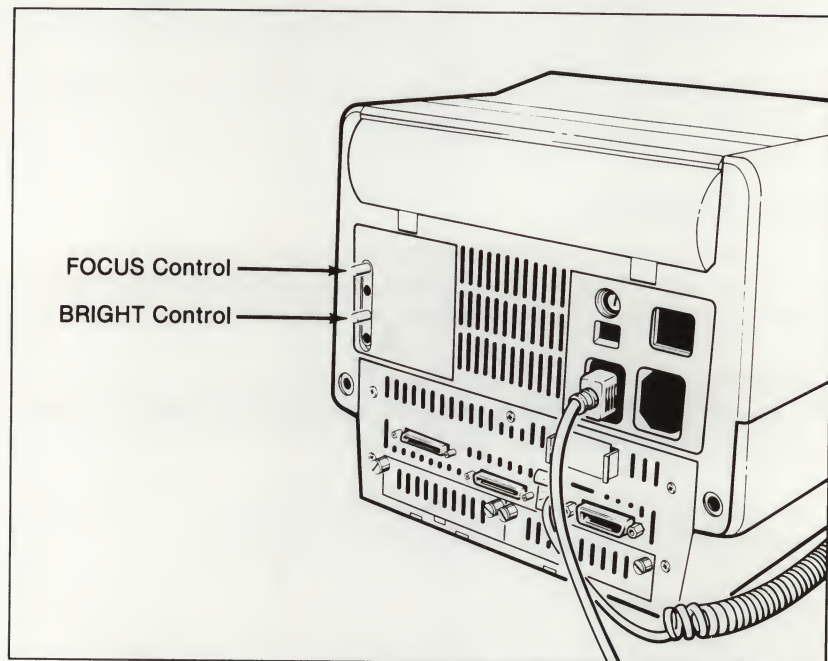
Be sure that any graphics information already on the screen has been saved, as screen alignment clears graphics information.

Follow these steps:

- 1) Press the **SYSTEM** key twice, then **service keys**, then **TOUCHSEN ALIGNMNT**.  
This screen appears:

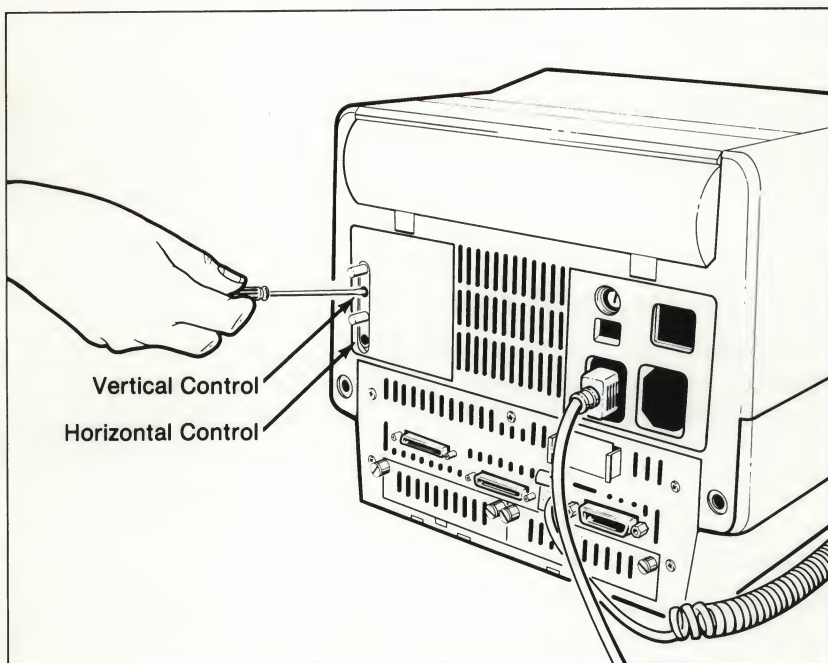


- 2) Adjust the focus of the screen using the FOCUS adjustment shown below:



- 3) Adjust the brightness of the screen with the BRIGHT adjustment shown above.

- 4) Adjust the horizontal until the vertical lines line up with the touch screen holes. Use the HORIZ CENTER adjustment as shown below:



- 5) Adjust the vertical until the horizontal lines line up with the touch screen holes. Use the VERT CENTER adjustment shown above.
- 6) Press CTRL Shift Clear Display to clear the screen.



## System Test

This test is very similar to the power-on test. If the message **System test failed XXXX Press RETURN to clear** appears when you press **System Test**, write down the four numbers (XXXX); a support person will be able to interpret the code.

## Identify ROM Test

Press **IDENTIFY ROMS** if you ever need to know what version your firmware (ROMs) is. You might be asked to do this by a support person.

## Datacommunications Test

**DATA COMM TEST** consists of a number of tests performed on datacommunication ports 1 and 2. If you are having trouble communicating with a host computer, press **DATA COMM TEST**. If the message **Datacomm test failed A2XX** appears, write down the A2XX number. A support person will be able to interpret this code.

## Internal Printer Test

Press **INT PRT TEST** (if you have one) to check your internal printer. Two lines of characters should print at the internal printer. If they do not, contact your hardware support person.



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# Appendix D

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## ERROR MESSAGES

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**Message:** A directory file must be empty before it can be deleted.

**Cause:** You tried to delete a directory that still contains files; you must "empty" the directory first.

**Remedy:** From P.A.M., press **Delete File/ Dir**, press the name(s) of the file(s) on the screen, then press **Start Delete**.

**Message:** A disc was not selected. Select the correct disc(s) below. Press **Show Applies**.

**Cause:** You are using the Remove part of the INSTALL program, and did not select a disc.

**Remedy:** Select a disc, then press **Show Applies**.

**Message:** A disc was not selected from both columns. Select the correct disc(s) below. Press **Show Applies**.

**Cause:** You are using the INSTALL Application program, and forgot to pick two discs, one from each column.

**Remedy:** Press one disc name in the left column, and one in the right column, then press **Show Applies**.

- Message:** A directory file must be chosen.
- Cause:** You are in File Manager, and neglected to select a directory file for an operation.
- Remedy:** If the directory name is on the screen, touch it. If not, type the name of the directory and press .
- 
- Message:** A file cannot be renamed to another disc.
- Cause:** You are using the rename feature of File Manager, and tried to rename a file (e.g., B:SAMPLE) to another name on another disc (e.g., A:EXAMPLE).
- Remedy:** Use the same disc letter; just change the name of the file (e.g., B:SAMPLE to B:EXAMPLE).

**Message:**            **A read only file cannot be deleted.**

**Cause:**            You are using File Manager's Delete, and tried to delete a read only file.

**Remedy:**          The file must be modified by the programmer, so that it is no longer read only.

**Message:**            **Access to browse file interrupted.**

**Cause:**            File Manager is having a problem finding information in a browse file.

**Remedy:**          Make sure the disc(s) containing File Manager and your file are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.

**Message:**            **Access to directory interrupted.**

**Cause:**            File Manager is having a problem finding information in a directory.

**Remedy:**          Make sure the disc(s) containing File Manager and the directory are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.

**Message:** Access to file interrupted.

**Cause:** File Manager was using a file, but can't now.

**Remedy:** Make sure the disc(s) containing File Manager and your files are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.

**Message:** Access to input file interrupted.

**Cause:** File Manager is having a problem finding information in an input file.

**Remedy:** Make sure the disc(s) containing File Manager and your files are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.

**Message:** Access to output file interrupted.

**Cause:** File Manager is having a problem finding information in an output file.

**Remedy:** Make sure the disc(s) containing File Manager and your files are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.

**Message:** Access to printer interrupted.

**Cause:** File Manager was using the printer, and something happened to interrupt that use.

**Remedy:** Check the cable from the printer to the Hp 150. Be sure that the printer is turned on. Check any error lights (such as out of ribbon) on the printer. Try printing again.

- Message:** Access to temporary file interrupted.
- Cause:** File Manager is having a problem finding information in a temporary file.
- Remedy:** Make sure the disc(s) containing File Manager and your files are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.
- 
- Message:** Application is too large to install onto disc X. Select the applics to be installed. Press Start Install.
- Cause:** There is not enough room on the disc for the application you chose.
- Remedy:** Put the application on another disc.
- 
- Message:** "Application" was not found on disc drive X.
- Cause:** P.A.M. tried to run an application that is no longer in the drive.
- Remedy:** Be sure the drive is turned on. Be sure the disc is inserted correctly. Press **Reread Discs** to see the applications that are on the discs.
- 
- Message:** Backup aborting: out of memory.
- Cause:** There is not enough computer RAM memory to run the COPY/BACKUP program.
- Remedy:** Call your hardware support person.
- 
- Message:** Bad command or filename
- Cause:** You are using MS-DOS from the command prompt, and either mistyped a command, or tried to use a command not present on the disc.
- Remedy:** Type DIR to see if the command is on the disc. If so, retype your command.



- Message:** **BAD tracks found - disc unusable.**
- Cause:** You are using FORMAT to format a disc that is damaged.
- Remedy:** Do not use this disc; use another disc.
- 
- Message:** **Cannot close file.**
- Cause:** File Manager tried to close a file and could not; the disc was probably removed in the middle of an operation.
- Remedy:** Reinsert the original disc, and try again.
- 
- Message:** **Cannot create to-file. Copied to \$\$\$\$\$\$. \$\$\$.**
- Cause:** You are using File Manager's Copy command, and named an illegal name for the new copy. File Manager named the file \$\$\$\$\$\$. \$\$\$ instead.
- Remedy:** You can do two things. Repeat the operation with a legal name, then delete \$\$\$\$\$\$. \$\$\$, or go to the MS-DOS command prompt, and use the copy command to copy \$\$\$\$\$\$. \$\$\$ to another name. DO NOT leave the file with the name \$\$\$\$\$\$. \$\$\$ . File Manager needs this file.
- 
- Message:** **Cannot find the correct files on drive X to install/ remove application. Insert the correct disc into drive X and press New Disc Ready.**
- Cause:** You are installing a multi-disc application, and have placed the wrong disc into the drive.
- Remedy:** Place the next sequential disc into the drive, and press **New Disc Ready**.

**Message:** **Cannot open browse file.**

**Cause:** File Manager tried to open a browse file and could not.

**Remedy:** Make sure the disc(s) containing File Manager and your file are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.

**Message:** **Cannot open input file.**

**Cause:** File Manager tried to open an input file and could not.

**Remedy:** Make sure the disc(s) containing File Manager and your file are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.

**Message:** **Cannot open output file.**

**Cause:** File Manager tried to open an output file and could not.

**Remedy:** Make sure the disc(s) containing File Manager and your file are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.

Check your pathname to be sure you used a legal disc letter, directory name(s), and file name, separated by back slashes.

**Message:** **Cannot open temporary file.**

**Cause:** File Manager wants to open a temporary file, but can't because you have used the name it wants to use.

**Remedy:** Delete any file or directory named \$\$\$\$\$\$\$\$. Try again.

- Message:** **Cannot use printer**
- Cause:** File Manager tried to use your printer and could not.
- Remedy:** Be sure your printer is turned on, and that cables are secure. If the above are true, try pressing the reset button on the printer; try printing again.
- 
- Message:** **Could not find files on disc drive X.**
- Cause:** You named a disc in COPY/BACKUP that either contains no files at all, or contains files in a format that COPY/ BACKUP cannot read.
- Remedy:** Press **Continue**. Choose a source directory or disc that contains the files you want to copy.
- 
- Message:** **Could not identify disc. Check drive.**
- Cause:** FORMAT could not identify this disc drive as one that is supported (3 1/2", 5 1/4", 8", fixed 5Mb., 10 Mb., 15 Mb., or IBM 3740 format.)
- Remedy:** Be sure the drive is turned on. Check your cables to be sure they are secure. Only format supported discs.
- 
- Message:** **Create error on disc X. (May exist as hidden file.)**
- Cause:** The file system returned an error when COPY/BACKUP attempted to create a destination file. This can occur if the file name already exists on the destination but has an attribute such as "hidden file."
- Remedy:** Press **Continue** to remove the message from the screen. Try changing the name of the file (on the source disc) you are copying.

**Message:****Datacomm test failed****Cause:**

The HP 150 firmware has detected an error during the datacommunications test.

**Remedy:**

Press  to clear the message from the screen. Be sure that the cable or test hood is connected correctly. Contact your hardware support person.

**Message:****Default configurations used****Cause:**

The battery in the HP 150 was too weak to hold any changes you may have made to the Configuration Menus. The entries used to start the system were the default entries.

**Remedy:**

Press  to clear the message from the screen. Change the two batteries in the battery pack (see the appendix on Maintenance). If the error persists with new batteries, you may be running a program that resets your configuration entries as it runs, or you may be experiencing a CMOS chip failure. Contact your support person.

**Message:****Destination disc in drive X is write protected.****Cause:**

You have write protected the destination disc by sliding the small tab in the slot to the down position with a 3 1/2" disc, or placing a write-protect sticker on a 5 1/4" disc.

**Remedy:**

Move the small tab to the up position if you are using a 3 1/2" disc. Remove the write-protect tab from a 5 1/4" disc. Press , then  or .



- Message:** **Destination disc is a backup disc.**
- Cause:** You are using COPY/BACKUP, and want to copy files to a disc that has been formatted and used as a backup disc. Copied files and backed up files cannot exist on the same disc.
- Remedy:** Press **Continue** to remove the message from the screen. Use different discs for backup and copy files. If you want to use this particular disc for copied files, use the FORMAT program to clear the backup files from it.
- 
- Message:** **Directory does not exist.**
- Cause:** In File Manager, you asked for a directory that is not on the system or on the disc.
- Remedy:** Be sure you are looking on the correct disc for the directory. Be sure you are spelling the directory name correctly.
- 
- Message:** **Disc access error on disc drive**
- Cause:** COPY/BACKUP can not read or write to the disc named.
- Remedy:** Press **Continue** to remove the message from the screen. Be sure that the drive indicated is turned on. Be sure that a disc is present in the drive. Be sure that you are indicating the correct disc letter (see the chapter on installation) for the drive. If these two criteria are met and the error still occurs, you may have a bad disc.
- 
- Message:** **Disc drive address is already in use for device X.**
- Cause:** In MS-DOS Config, you pressed **Save Config** after choosing the same interface/ address/ unit number as the one already assigned to device X.
- Remedy:** Change the values of one of the devices, so that each is unique.



**Message:** Disc drive is empty, off, or undefined.

**Cause:** COPY/BACKUP has tried to find a disc drive and failed.

**Remedy:** Press **Continue** to remove the message from the screen. Be sure that the drive indicated is turned on. Be sure that a disc is present in the drive. Be sure that you are indicating the correct disc letter (see the chapter on installation) for the drive. If these two criteria are met, and the error still occurs, you may have a bad disc.

**Message:** Disc drive X is empty, off, or write protected. Check disc drive and press New Disc Ready to continue or Stop Install to exit.

**Cause:** You are using the INSTALL Application program. You indicated a drive with no disc in it or a drive that is turned off.

**Remedy:** Put a disc into drive X if it is a flexible drive, or turn the drive on if it is off.

**Message:** Disc error on browse file

**Cause:** File Manager has encountered a disc problem while using browse with a file.

**Remedy:** Make sure the disc(s) containing File Manager and your file are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.

If none of these measures work, you may have a bad disc; in this case, use the MS-DOS Recover command to recover as much information as possible, and put it on another disc.

**Message:** **Disc error on directory file**

**Cause:** File Manager has encountered a disc problem while using a directory.

**Remedy:** Make sure the disc(s) containing File Manager and the directory are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.

If none of these measures work, you may have a bad disc; in this case, use the MS-DOS Recover command to recover as much information as possible, and put it on another disc.

**Message:** **Disc error on input file**

**Cause:** File Manager has encountered a disc problem while using an input file.

**Remedy:** Make sure the disc(s) containing File Manager and your file(s) are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.

If none of these measures work, you may have a bad disc; in this case, use the MS-DOS Recover command to recover as much information as possible, and put it on another disc.

**Message:** **Disc error on output file**

**Cause:** File Manager has encountered a disc problem while using an output file.

**Remedy:** Make sure the disc(s) containing File Manager and your file(s) are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.

If none of these measures work, you may have a bad disc; in this case, use the MS-DOS Recover command to recover as much information as possible, and put it on another disc.

**Message:****Disc error on print file****Cause:**

File Manager has encountered a disc problem while using print with one of your files.

**Remedy:**

Make sure the disc(s) containing File Manager and your file are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.

If none of these measures work, you may have a bad disc; in this case, use the MS-DOS Recover command to recover as much information as possible, and put it on another disc.

**Message:****Disc error on temporary file****Cause:**

File Manager has encountered a disc problem while using a temporary file.

**Remedy:**

Make sure the disc(s) containing File Manager and your file(s) are in a drive(s). Make sure the door(s) are closed on the drive(s), and the cables from the drive to the HP 150 are secure. Try again.

If none of these measures work, you may have a bad disc; in this case, use the MS-DOS Recover command to recover as much information as possible, and put it on another disc.

**Message:****Disc error reading drive X****Cause:**

Your disc may be worn or damaged.

**Remedy:**

Press **Continue** to remove the message from the screen. Try again. If the next read works, duplicate this disc right away (use COPY/BACKUP's COPY). If it doesn't work, try using the MS-DOS RECOVER command.

- Message:** **Disc error writing drive X**
- Cause:** Your disc may be worn or damaged.
- Remedy:** Press **Return** to clear the message from the screen. Try again. If the next read works, duplicate this disc right away (use COPY/BACKUP's COPY). If it doesn't work, try using the MS-DOS RECOVER command.
- 
- Message:** **Disc is not formatted.**
- Cause:** Using File Manager, you tried to use a disc that was not formatted.
- Remedy:** Format the disc, according to the directions in the chapter on discs.
- 
- Message:** **Disc is write protected.**
- Cause:** Using File Manager, you are trying to write information on a disc that is write protected.
- Remedy:** You can store the information elsewhere, or reverse the write protection, as described in the Disc chapter.
- 
- Message:** **Disc read error on disc drive X.**
- Cause:** COPY/BACKUP has tried to read your disc and failed.
- Remedy:** Press **Continue** to remove the message from the screen. Be sure the drive door is shut (if flexible drive). Be sure that the disc is placed in the drive with the label side up, silver plate in first. If these two criteria are met and the error still occurs, you may have a bad disc.



**Message:** Disc unsuitable for system disc.

**Cause:** You are using FORMAT with the **Copy System** option on. FORMAT is unable to copy the operating system to the disc being formatted because this disc has bad sectors in the location where the operating system should be placed.

**Remedy:** You could possibly use this disc to store information other than the operating system. If you need a copy of the operating system present, use another disc.

**Message:** Disc write error on disc drive X.

**Cause:** COPY/BACKUP has tried to write on your disc and failed.

**Remedy:** Press **Continue** to clear the message from the screen. Be sure the drive door is shut (if flexible drive). Be sure that the disc is placed in the drive with the label side up, silver plate in first. If these two criteria are met and the error still occurs, you may have a bad disc.

**Message:** Duplicate files (displayed below) on backup disc.

**Cause:** You are using COPY/BACKUP to back up files, and indicated a destination disc that already contains a copy of the files.

**Remedy:** BACKUP will not overwrite files with duplicate names. Press **Continue** to clear the message from the screen. Use another destination disc, or clear these files with the FORMAT program.



**Message:** Entered date is invalid.

**Cause:** You are using COPY/BACKUP, and are selecting files by last date altered. You entered an illegal date.

**Remedy:** Press **Continue** and type a date in the format MM-DD-YY or the format MM/DD/YY (e.g., 7/15/83). Do not type dates before 1/1/80 or after 12/31/43.

**Message:** **ERROR 1 - NO XXXX.MSG**

**Cause:** A vital part of your software cannot be found.

**Remedy:** Call your support person.

**Message:** **ERROR ACCESSING DRIVE X. Check that the correct disc is in and is not write protected. Press Continue to resume or Setup Main.**

**Cause:** You are using SET UP P.A.M. and chose a disc to alter that cannot be found.

**Remedy:** Make sure that the write protect tab is in the up position or has never been removed. Make sure the disc is placed in the drive with the silver plate in first.

**Message:** **ERROR ACCESSING DRIVE X. Check that the correct disc is in and is not write protected. Press Continue to resume or Exit.**

**Cause:** You are using SET UP P.A.M. and chose a disc to alter that cannot be found.

**Remedy:** Make sure that the write protect tab is in the up position or has never been removed. Make sure the disc is placed in the drive with the silver plate in first.

**Message:** Error occurred while reading saved configuration. Default assignments assumed.

**Cause:** The MS-DOS Configuration program could not read the configuration information saved by the last **Save Config**, or the information that was read was invalid.

**Remedy:** Change the values to those you want to use. Press **Save Config**.

**Message:** FILE ALLOCATION TABLE BAD FOR DRIVE X

**Cause:** One of the allocation tables in memory points to non-existent blocks of memory on the disc. The disc may have been incorrectly formatted, or not formatted at all.

**Remedy:** Type R (Retry) and press Return. If this does not work, format disc X before trying to use it again.

**Message:** File was too large to copy.

**Cause:** You are using COPY/BACKUP, and chose a file to copy that is bigger than the entire destination disc.

**Remedy:** Press **Continue** to remove the message. Use BACKUP instead of COPY.

**Message:** Format failure. No disc in drive.

**Cause:** The FORMAT program tried to format a disc that was not in the drive.

**Remedy:** Be sure a disc is in the drive, the drive is turned on, and the door is closed.

- Message:** **Format failure. One or more discs could not be formatted.**
- Cause:** The FORMAT program tried to format a disc that was damaged, taken out of the drive in mid format, or had the door opened.
- Remedy:** A damaged disc should not be formatted; use another disc. Be sure the disc is present in the drive, the door is closed, and the drive is turned on.
- 
- Message:** **Format failure. Write-protected disc.**
- Cause:** The FORMAT program tried to format a disc that was write-protected.
- Remedy:** Remove the write-protect from the disc and try again.
- 
- Message:** **Found maximum number of installed applications. Only first 80 displayed.**
- Cause:** P.A.M. can only deal with 80 applications at a time. The rest don't appear on the screen.
- Remedy:** Remove or turn off discs that are not needed. If this is not possible, regroup applications (using INSTALL) on discs in a more convenient fashion.
- 
- Message:** **Function locked**
- Cause:** Functions, such as terminal test, may be locked out by setting in the terminal configuration menu, or by escape sequences generated by a program. Any attempt to use a locked function results in this message.
- Remedy:** Press  to clear the message from the screen. Either avoid using the locked function, or unlock it in the terminal configuration menu.

**Message:** **HP-IB Device Error**

**Cause:** A non-recoverable error has occurred as the HP 150 firmware tried to access the HP-IB device.

**Remedy:** Press  to clear the message. Check the HP-IB cables for firm connections. Check HP-IB addresses as described in Chapter 2.

**Message:** **HP-IB ERROR**

**Cause:** An error occurred while the HP 150 firmware was sending information on the HP-IB port.

**Remedy:** Press  to clear the message. Check the HP-IB cables for firm connections. Check printers, drives, etc. to be sure they are turned on and operating properly. Check HP-IB addresses as described in Chapter 2.

**Message:** **HP-IB printer error**

**Cause:** The HP 150 tried to send information to a printer connected via the HP-IB port, and got no response.

**Remedy:** Press  to clear the message from the screen. Be sure the printer is turned on. Be sure the printer is correctly configured according to the directions in Chapter 2 of this manual.

**Message:** **Illegal for edit type: ALPHABETIC**

**Cause:** The HP 150 firmware has detected that the data in this field doesn't match the field's data type.

**Remedy:** Press  to clear the message from the screen. Use only alphabetic data in this field (no numbers).



**Message:** **Illegal for edit type: NUMERIC**

**Cause:** The HP 150 firmware has detected that the data in this field doesn't match the field's data type.

**Remedy:** Press  to clear the message from the screen. Use only numeric data in this field (no letters).

**Message:** **Illegal or no Destination Device**

**Cause:** The HP 150 firmware has look for your "to device" entry and either can't find or can't understand it.

**Remedy:** Press  to clear the message from the screen. Be sure a printer is named as a "to device", as described in Chapter 2.

**Message:** **Illegal or no Source Device**

**Cause:** The HP 150 firmware has looked for your "to device" entry and either can't find or can't understand it.

**Remedy:** Press  to clear the message from the screen. Be sure a printer is named as a "to device", as described in Chapter 2.

**Message:** **Illegal Unit Device**

**Cause:** The HP 150 firmware

**Remedy:** Press  to clear the message from the screen.

**Message:** **Incorrect DOS version**

**Cause:** You are using FORMAT with an old version of MS-DOS.

**Remedy:** Press . Use MS-DOS version 2.0 or later with FORMAT.



**Message:** **Insufficient memory for system transfer.**

**Cause:** You are using the FORMAT program with the **Copy System** option on. There is not enough memory available inside the HP 150 to copy the operating system to the new disc.

**Remedy:** Press  to remove the message from the screen. Contact your hardware support engineer.

**Message:** **Integral Printer Error**

**Cause:** The HP 150 firmware has detected a problem with the printer built into your HP 150.

**Remedy:** Press  to clear the message from the screen. If the problem persists, check the printer with the internal printer test. If the internal printer test fails, contact your hardware support person.

**Message:** **Internal P.A.M. error. Bad MSDOS command issued.**

**Cause:** P.A.M. had problems loading a program.

**Remedy:** Restart your system; try again. If this does not work, call your support person.

**Message:** **Invalid characters in volume label.**

**Cause:** In FORMAT, you supplied a name for a disc to be formatted; this name contained illegal characters.

**Remedy:** Press  to clear the message. Type a new name that does not contain the characters . ][ ? \ = \* ; : - < > .

**Message:**            **Invalid Configuration**

**Cause:**            The HP 150 firmware has detected that the configuration you selected isn't supported by the datacommunications hardware that you have installed.

**Remedy:**           Press  to clear the message from the screen. Use a different configuration, or add the optional hardware (printer, plotter, accessory boards, internal hardware, etc.).

**Message:**            **Invalid date format. Be sure to enter Month/Day/Year.**

**Cause:**            You are trying to set the HP 150 date from P.A.M.'s , and typed an unacceptable date.

**Remedy:**           Backspace to the beginning of the line. Type a date that is in the Month/Day/Year format, with the year greater than 1980 or 80.

**Message:**            **Invalid destination disc or directory.**

**Cause:**            You are using COPY/BACKUP, and typed a disc or directory name. You probably forgot a necessary part of the name.

**Remedy:**           Press  to clear the message from the screen. For a disc, type the letter and a colon (A: B: C:). For a directory, type the disc letter, colon, backslash, and directory names (A:\DIRNAME1\DIRNAME2).

**Message:**            **Invalid drive.**

**Cause:**            You are using FORMAT, and named a disc drive letter that you either don't have or have turned off.

**Remedy:**           If the drive is off, turn it on, press  and try again. If the drive doesn't exist on your system, press  and choose another drive letter.

**Message:** Invalid source disc disc or directory.

**Cause:** You are using COPY/BACKUP, and typed a disc or directory name. You probably forgot a necessary part of the name.

**Remedy:** Press  to clear the message from the screen. For a disc, type the letter and a colon (A: B: C:). For a directory, type the disc letter, colon, backslash, and directory names (A:\DIRNAME1\DIRNAME2).

**Message:** Invalid time format. Be sure to enter Hours:Minutes.

**Cause:** You are trying to set the HP 150 time from P.A.M.'s , and typed an unacceptable time.

**Remedy:** Backspace to the beginning of the line. Type a time that is in the Hours:Seconds format on a 24 hour clock.

**Message:** Load Op Sys failed, device not found.

**Cause:** The HP 150 can't find your disc drive or accessory board.

**Remedy:** Press  to remove the message from the screen. Be sure the disc drive is turned on, and a copy of the operating system is in the A: drive (or in the drive you load the operating system from if you changed from A:).

**Message:** Load Op Sys failed, no Op Sys on disc.

**Cause:** The operating system is not on your A: disc.

**Remedy:** Press  to remove the message from the screen. Replace the disc in drive A: with one that contains the operating system. (If you changed the boot disc from A:, then be sure the operating system is in that disc.)

**Message:** Load Op Sys failed, not enough memory.  
**Cause:** The amount of memory (inside the HP 150) is not enough to load the operating system.  
**Remedy:** Call your hardware support person.

**Message:** Load Op Sys failed, Op Sys disc not found.  
**Cause:** The HP 150 can't find the operating system disc.  
**Remedy:** Press  to remove the message from the screen. Be sure the disc drive is turned on, and a copy of the operating system is in the A: drive (or in the drive you load the operating system from if you changed from A:).

**Message:** MEMORY FULL  
**Cause:** The HP 150 alpha memory (memory that contains characters that are read to the screen) is full, and can't contain all of the enhancements plus the data sent.  
**Remedy:** Some data was probably lost. Press  to clear the message from the screen. Press   when possible. Retype the data.

**Message:** Memory test failed  
**Cause:** The HP 150 firmware has detected an error during the memory test (run from the  keys).  
**Remedy:** Write down any numbers that appeared on the screen. Contact your hardware support person.

**Message:** MUST SELECT A DISC TO CLEAR.  
**Cause:** You are using the FORMAT program and pressed  before you chose a disc.  
**Remedy:** Press , then select a disc. Touch  again.



**Message:** **MUST SELECT A DISC TO FORMAT.**

**Cause:** You are using FORMAT, and touched **Start Format** before you selected a disc to format.

**Remedy:** Press **Return**, then touch a disc letter on the screen. Touch **Start Format**.

**Message:** **No device driver.**

**Cause:** The HP 150 firmware can't find a program called a device driver for this printer, plotter, or other device.

**Remedy:** Press **CTRL** **Shift** **Reset**. If the error persists, contact your hardware support person.

**Message:** **No discs were found. Insert a disc and press Reread Discs or press Exit.**

**Cause:** SET UP P.A.M. looked for discs and found none.

**Remedy:** Be sure drives are turned on and discs are properly inserted in drives. Press **Reread Discs**.

**Message:** **No file or directory was selected.**

**Cause:** In File Manager, you tried to use PRINT without naming a file or directory.

**Remedy:** Press **Return** to remove the message. Select a file or directory. Try again.

**Message:** **No files were selected for copy.**

**Cause:** In COPY/BACKUP, you pressed **Start Copy** before you selected any files to be copied.

**Remedy:** Touch **Continue** then a file name(s) on the screen. Touch **Start Copy** again.



**Message:** **Non-DOS disc error reading/writing drive X.**  
**Cause:** The disc in drive X has not been properly formatted to run on an HP 150.  
**Remedy:** Type A to abort the read or write, and reformat the disc (if you don't mind losing all of the data on it).

**Message:** **Not enough memory to run.**  
**Cause:** There is not enough memory to run File Manager.  
**Remedy:** Call your support person.

**Message:** **NOT READY ERROR READING DRIVE X**  
**Cause:** You tried to read from a disc that isn't ready.  
**Remedy:** Make sure drive X is turned on. Make sure a disc is in the drive. Make sure the door is shut. Type R (Retry) and press Return or press A (terminate program) and press Return.

**Message:** **NOT READY ERROR WRITING DRIVE X**  
**Cause:** You tried to write to a disc that isn't ready.  
**Remedy:** Make sure drive X is turned on. Make sure a disc is in the drive. Make sure the door is shut. Type R (Retry) and press Return or press A (terminate program) and press Return.

**Message:** **Not enough memory to run Application.**  
**Cause:** P.A.M. tried to run the application you indicated, but could not because there is not enough memory available to do so.  
**Remedy:** If the program lacks 40K or less memory, try running it from the MS-DOS prompt. If you called P.A.M. from the MS-DOS prompt (not recommended), touch **Exit P.A.M.** Another remedy is to buy more memory.

**Message:** Not enough space on disc. No action taken.

**Cause:** File Manager tried to create a new file or perform a task that required disc space. Not enough disc space was available.

**Remedy:** Use another disc, or delete some of the files on this disc.

**Message:** Pod/Driver Types Not Matched

**Cause:** The HP 150 firmware has detected either a bad datacommunications port, or the wrong type of datacommunications port for the configuration you set.

**Remedy:** Press  to clear the message. Check your datacommunications port configuration as described in the appendix on configuration. If the problem persists, contact your hardware support person.

**Message:** Power-on test failed

**Cause:** The HP 150 firmware tests the system every time you turn it on, and this test failed.

**Remedy:** Try starting the system again. If the message appears again, contact your hardware support person.

**Message:** Root directory of "To file" full. Unable to open temporary.

**Cause:** Your root directory is full; it has 512 files in it. This is the maximum number of files.

**Remedy:** Create subdirectories, and split the files up.

**Message:** SEEK ERROR READING DRIVE X

**Cause:** Disc X is improperly formatted.

**Remedy:** Reformat this disc (if you don't mind losing the data on it), or use the MS-DOS RECOVER command.

- Message:** **SEEK ERROR WRITING DRIVE X**
- Cause:** Disc X is improperly formatted.
- Remedy:** Reformat this disc (if you don't mind losing the data on it), or use the MS-DOS RECOVER command.
- 
- Message:** **Selected file(s) not on disc X.**
- Cause:** You are using COPY/BACKUP, and indicated that you wanted to copy files from disc X. The files on disc X however, do not match the list of files on the screen; you probably took the disc in drive X out since COPY/ BACKUP read the files from it.
- Remedy:** Reinsert the disc containing the files into drive X. Touch **Continue**, then **Start Copy** or **Start Backup**. (To copy files from a new disc, press **Continue**, **Reread Disc**, then select files from the new list.)
- 
- Message:** **Source = Destination**
- Cause:** An attempt was made to send data from a device to itself.
- Remedy:** If the error occurred while using the printer from a programming language, the MSDOS prompt, or Local Mode, go to the "to devices" level of function labels and turn off the incorrect device (usually display). If the error occurred while an application program was running, call your support person for that program.
- 
- Message:** **Source and destination disc/directory are the same.**
- Cause:** You are using COPY/BACKUP, and chose the same disc to copy from and to copy to.
- Remedy:** Press **Continue**, and indicate different discs for Copy From: and Copy to:

**Message:** **System error.**  
**Cause:** File Manager has detected a system error.  
**Remedy:** Call your support person.

**Message:** **System test failed**  
**Cause:** The HP 150 firmware has detected an error during the System test.  
**Remedy:** Write down any numbers that appeared with this test. Contact your hardware support person.

**Message:** **The browse failed. Check pathname.**  
**Cause:** You are using File Manager's Browse, and your command is not working.  
**Remedy:** Make sure you are using a legal path name (X:\dir\subdir\ file).

**Message:** **The copy failed. Check pathname.**  
**Cause:** You are using File Manager's Copy, and your command is not working.  
**Remedy:** Make sure you are using a legal path name (X:\dir\subdir\ file).

**Message:** **The delete failed. Check pathname.**  
**Cause:** You are using File Manager's Delete, and your command is not working.  
**Remedy:** Make sure you are using a legal path name (X:\dir\subdir\ file).

**Message:** **The directory already exists.**  
**Cause:** You are using File Manager to create a directory that already exists.  
**Remedy:** Choose another name for the new directory, or delete each file from the old directory and use it.



**Message:**           **The directory already exists or matches a device name.**

**Cause:**            You are using File Manager to create a directory that already exists or is the name used for a device.

**Remedy:**           Choose another name for the new directory.

**Message:**           **The directory cannot be read. Check disc.**

**Cause:**            File Manager cannot read the directory you have indicated. You may have changed discs since this list was generated.

**Remedy:**           Touch **Reread Discs** to be sure the directory is in a drive. Replace discs if necessary.

**Message:**           **The directory contains no files.**

**Cause:**            You tried to list the contents of an empty directory.

**Remedy:**           You can delete an empty directory, or add files to it.

**Message:**           **The directory name corresponds with a device name.**

**Cause:**            You tried to create a new directory in File Manager with a name that is used by MS-DOS.

**Remedy:**           Use another name for the directory.

**Message:**           **The directory contains no files.**

**Cause:**            In File Manager, you tried to list the contents of an empty directory.

**Remedy:**           Either delete the directory or add files to it.



- Message:** The drive select failed. Check pathname and drive.
- Cause:** You are using File Manager, and selected a drive that cannot be used.
- Remedy:** Be sure the drive you want to use is turned on. Be sure to use the correct letter name for the drive. If you used a pathname, be sure that all directory names are spelled correctly and exist.
- 
- Message:** The file exists.
- Cause:** Using File Manager, you tried to name a file with a name used by another file.
- 
- Message:** The full path name must be less than 64 characters.
- Cause:** In File Manager, you named a drive/directory/file that was too long.
- Remedy:** If the path is longer than 64 characters, name half of it first. When you get to that directory, name the other half.
- 
- Message:** The parent directory does not exist.
- Cause:** You are using File Manager, and gave a path name that contains a non-existent directory name (e.g., X:\OLDIE\file).
- Remedy:** Find out what the real parent file name is. Touch **Choose Dir** and supply the directory name \ to get to the root directory. Look at the list of subdirectories. Is the one you want there? Did you misspell its name in your path name?

**Message:**           **The path name is not valid.**

**Cause:**            You have named a pathname in File Manager that is not legal.

**Remedy:**           Be sure you are using back slashes (not forward).  
Be sure you are typing the names of the directories correctly (8 characters that are legal file name characters, as shown in Chapter 4).

**Message:**           **The print failed. Check pathname.**

**Cause:**            You are using File Manager's Print, and your command is not working.

**Remedy:**           Make sure you are using a legal path name (X:\dir\subdir\ file).

**Message:**           **The rename failed. Check pathname.**

**Cause:**            You are using File Manager's Rename, and your command is not working.

**Remedy:**           Make sure you are using a legal path name (X:\dir\subdir\ file).

**Message:**           **The root directory cannot be deleted.**

**Cause:**            You are using File Manager, and tried to delete the root directory on a disc.

**Remedy:**           Do not try to delete the root; it contains all of your applications programs and disc "housekeeping" information.

**Message:**           **The root directory is full.**

**Cause:**            You are only allowed 512 files in a directory; you are trying to add # 513 with File Manager.

**Remedy:**           Regroup your files into subdirectories.

**Message:**           **The selected disc is not presently on the system. Please select again.**

**Cause:**            You are using SET UP P.A.M., and chose to alter a disc that is not available.

**Remedy:**           Be sure the disc you want to use is in the drive, and the drive is turned on. Try again.

**Message:**           **The "To file" already exists as a directory file.**

**Cause:**            In File Manager's Copy, you tried to name the new copy a name that has already been used for a directory.

**Remedy:**           Use another name, or delete the directory before naming the file.

**Message:**           **There are no installed applications to run. Press Help for more information.**

**Cause:**            No applications have been installed on the checked discs.

**Remedy:**           Install applications according to the directions in the Applications chapter.

**Message:**           **There are no removable/ installable applications on disc X. Select the correct disc(s) below. Press Show Applies.**

**Cause:**            You are using INSTALL and selected a disc with no applications on it.

**Remedy:**           Choose another disc (or replace the flexible disc in the drive) and press **Show Applies** again.

**Message:**           **There are no selected applications. Select the applications to be installed. Press Start Install.**

**Cause:**            You are using the INSTALL Application program, and pressed START INSTALL before you pressed an application name on the screen.

**Remedy:**           Press the name of the application you want installed or removed, and press **START INSTALL**.

- Message:** Too many files open.
- Cause:** File Manager has determined that the MS-DOS open file tables are full, probably because File Manager was run from an application.
- Remedy:** Exit the application, and run File Manager from P.A.M.
- 
- Message:** Unable to save new configuration.
- Cause:** You pressed **Save Config** in the MS-DOS Configuration program, and the information could not be written and successfully read back from memory.
- Remedy:** Change the batteries in the HP 150, and try again.
- 
- Message:** Use NEXT or PREVIOUS key
- Cause:** You tried to type characters into a next/prev type of configuration field in a configuration menu.
- Remedy:** Press **Return** to clear the message. Position the cursor at the field you want to change and touch **NEXT CHOICE** or **PREV CHOICE**.
- 
- Message:** Value out of range
- Cause:** You are using the HP 150 configuration menus, and entered a value for a field that is either too great or too small for the field.
- Remedy:** Press **Return** to clear the message. Retype the entry, using a valid entry as described in the appendix on configuration.



**Message:** **Warning: Configuration has been changed and not saved.**

**Cause:** In the MS-DOS Configuration program, you pressed **Exit Config** after you changed some of the values.

**Remedy:** This is only a warning. If you want to permanently change the menu to reflect the changes, press **Save Config** then **Exit Config**. Otherwise, press **Exit Config**.

**Message:** **Warning: Disc drive A: is not assigned to Op Sys Dev in GLOBAL CONFIGURATION.**

**Cause:** In MS-DOS Config, you pressed **Save Config** when Op Sys Dev was not set to A: (usual state). There are three entries that must be set: Op Sys Dev, Op Sys Dev address, and Drive A. The address should match the number following HP-IB in the Op Sys Dev field, and the drive A: value would be zero.

**Remedy:** This is only a warning. Press **Save Config** again to override the warning, or change the Drive A or Op Sys Dev entry in the Global Configuration menu.

**Message:** **WARNING: Unable to display all files on disc.**

**Cause:** The disc named has more than 512 files; COPY/BACKUP can only display/select the first 512 files in any directory.

**Remedy:** Press **continue** to remove the message from the screen. Create some subdirectories to regroup the files.



**Message:** WRITE PROTECT ERROR WRITING DRIVE X

**Cause:** You tried to store a file on a flexible disc that is write-protected.

**Remedy:** If it is a 3 1/2" disc, move the small plastic tab in the lower corner down. If it is a 5 1/4" disc, remove the tab on the square hole. If it is an 8" disc, put a tab on the round hole. Replace the disc in the drive, type R (for Retry), and press Return.

**Message:** Wrong source disc, expected disc X.

**Cause:** You are using COPY/BACKUP, and restoring a backup of more than one disc. The discs are date stamped, and numbered in the order that you backed them up. The disc you are using is either in the wrong order, or the date on it doesn't match the first disc.

**Remedy:** Press **Continue**, and insert the correct disc into the drive. Try again.

**Message:** You cannot install from and to the same disc.

**Cause:** You are using the INSTALL Disc Application program, and pressed the same disc to install from as the disc to install to.

**Remedy:** Press one disc name in the left column and a different disc name in the right column, then press **DISPLAY APPLICS**.

## **Additional Assistance**

If you have questions which are not answered here, call your dealer or Hewlett-Packard for phone-in software assistance.

### **Call Your Dealer**

If your system has been purchased from a dealer or system house, they have worked with you to define your application and configure your system. In this case, your dealer is the best source of assistance, as he knows your needs and your configuration.

If your dealer is designated as a Personal Computer Dealer Repair Center, you may contact them for hardware repair.

### **Call a Toll-Free Number at Hewlett-Packard**

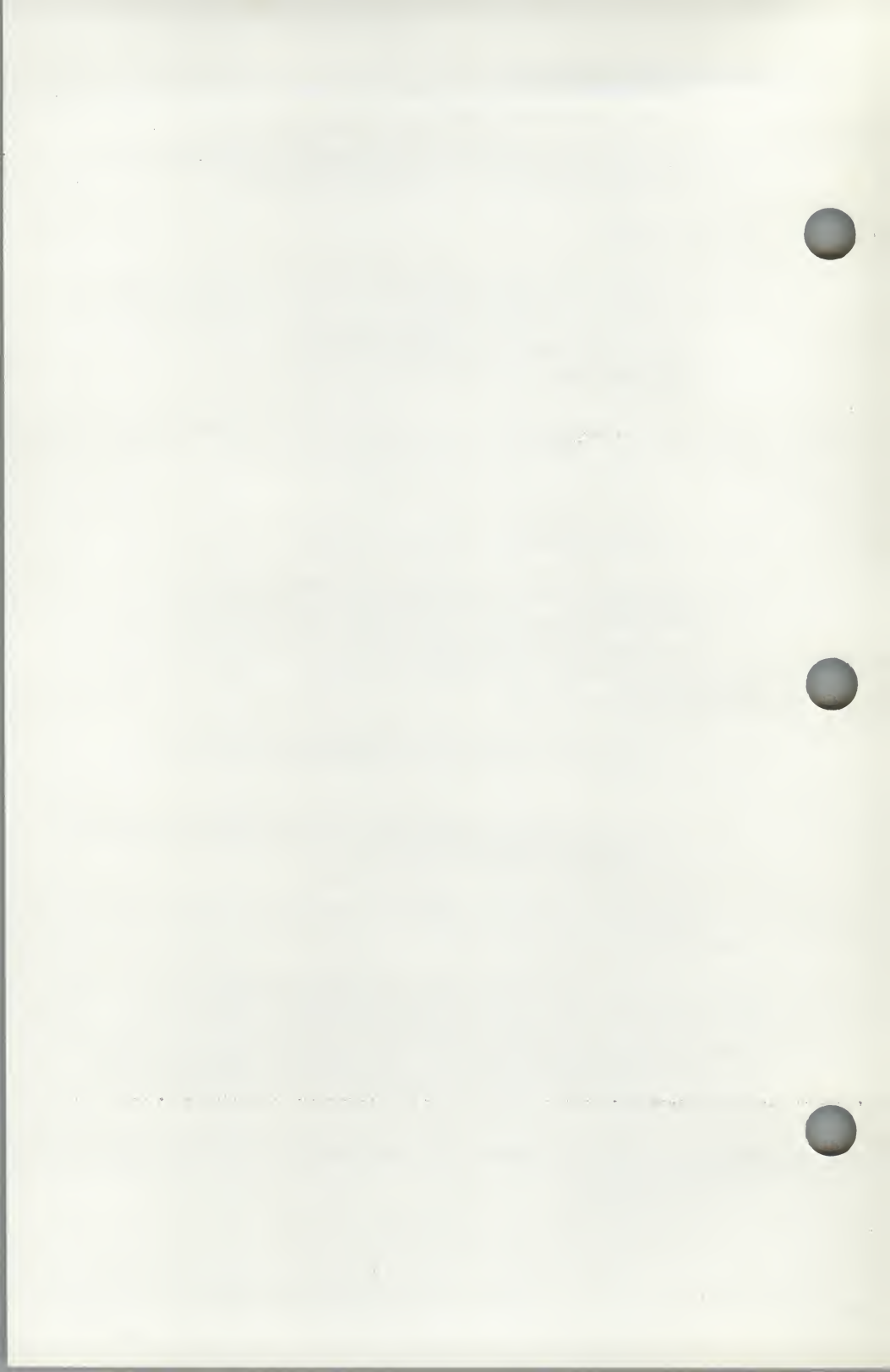
To provide answers to your questions, HP's Phone-In Software Assistance is available to you at no charge. You call a Phone-In Software Assistance Center in your region or country; a coordinator evaluates the question and arranges for the appropriate HP support representative to call you.

Here's how to obtain your Personal Computer Phone-In Software Assistance number:

- In the U.S., call toll-free 800-for-HPPC. You will then be given the toll-free telephone number for your area.
- Outside the U.S., call your dealer or your local HP office to obtain the number for your country.

If your hardware should fail, refer to the Support Guide shipped with this manual for information on obtaining service during or after warranty. The Guide includes the Series 100 Hardware Warranty, a Repair Information Form and a directory of Hewlett-Packard Field Repair Centers.

If you need further assistance call your local Hewlett-Packard Sales and Service Office.



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# Glossary

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<b>Access</b>	<p>To locate and retrieve information from the computer's memory.</p> <p>Typical access time for a microcomputer like the one you are presently using is a few microseconds.</p>
<b>Accessory Card</b>	<p>An accessory card is a printed circuit board that fits into the main board and extends the computer's capabilities.</p>
<b>Accessory Slot</b>	<p>An accessory slot is a slot in the main board where an option card can be plugged in.</p>
<b>Acoustic Coupler</b>	<p>A hardware device that allows the computer to send and receive data over telephone lines.</p> <p>This term is sometimes used to refer to the entire modem.</p>
<b>Address</b>	<p>"Where a bit has its mail sent."</p> <p>A number that identifies the exact location of information stored in the computer's memory.</p>
<b>Application Program</b>	<p>A software program written to solve a specific problem or accomplish a specific task, for example: spreadsheets, word processing, business graphics, database management, communications, scheduling.</p>

<b>ASCII</b>	<p>Acronym for American Standard Code of Information Interchange.</p> <p>ASCII is a code that represents upper and lower case characters, numbers, and special symbols in binary code. The ASCII code is standardized so that computers can talk to each other.</p>
<b>Assembly Language</b>	<p>Assembly language is a low level computer language that resembles the electronic code of the computer while allowing the use of mnemonic instructions.</p>
<b>Backup</b>	<p>"Data processing's cheapest insurance."</p> <p>A backup is a duplicate copy of a disc made in case the original is lost or damaged.</p>
<b>BASIC</b>	<p>Acronym for Beginners All-purpose Symbolic Instruction Code.</p> <p>BASIC is the most common high level programming language for personal computers.</p>
<b>Baud</b>	<p>"A bit on the fast side."</p> <p>Baud is a measure of the speed at which bits travel between a computer and a peripheral device, or between two computers.</p>
<b>Binary</b>	<p>The native language of all computers.</p> <p>Binary is a number system that uses only two numerals, 0 and 1, to represent any character or symbol.</p>
<b>Bit</b>	<p>Acronym for Binary Digit, either a 0 or a 1.</p> <p>A bit represents an "on" or "off" electrical condition, and is therefore the smallest unit of information that can exist.</p>
<b>Board</b>	<p>A board is a fiberglass or pressed paper sheet used for mounting the microcomputer's electronic circuits and integrated circuits.</p>



**Booting**

The computer "picking itself up by its own bootstraps".

Booting up your computer puts it in a ready-to-run condition. Your bootstrap program, which is often called an operating system, is stored in memory and automatically activates other software.

**Buffer**

A temporary part of the computer's memory where data is held until it can be transmitted or processed.

**Bug**

A bug is a flaw in the software or in the hardware which stops the computer from working correctly, if at all.

This term was first coined from early computer days when a singed butterfly was found to have caused a malfunction in the Mark I computer.

**Byte**

A set of eight bits.

A byte is used to represent one character; a single letter, number, or other symbol.

**Cable**

Cables are connectors between computers and peripherals (printers, plotters, disc drives). The HP 150 uses 2 kinds of cables: 1) HP-IB cables are used with only HP equipment, 2) RS-232 cables are used with all personal computers.

**CAI**

Acronym for Computer Assisted Instruction.

Using the computer as a teaching tool involves a two-way conversation between the student and the computer. The computer informs the student of the right and wrong answers as he makes them, and provides feedback regarding the student's progress.

**Character**

A symbol such as a number or letter, that can be shown on a screen or typed on a keyboard.

In a small computer, a character is usually represented by 8 bits (one byte).

<b>Chip</b>	<p>The seed of micro-technology.</p> <p>A chip is a slice of silicon imbedded with thousands of microscopic electronic circuits. Chip is a nickname for integrated circuit.</p> <p>Typical chips used in microcomputers are: RAM, ROM, PROM, EPROM</p>
<b>COBOL</b>	<p>Acronym for COMmon Business Oriented Language.</p> <p>Cobol is a high level programming language used primarily for business applications.</p>
<b>Compiler</b>	<p>A compiler is a software program that translates pograms written in high level language (source code) into a lower level language (object code) which the computer can then execute.</p>
<b>Computer</b>	<p>A main frame, a minicomputer, or a microcomputer.</p> <p>A computer is any device that can receive and then follow instructions to manipulate data.</p>
<b>CPU</b>	<p>"The brain of the computer."</p> <p>Acronym for Central Processing Unit.</p> <p>The CPU controls all operations and does the actual calculations by collecting, decoding, and executing instructions.</p>
<b>Crash</b>	<p>System failure caused by a hardware breakdown or software error.</p>
<b>CRT</b>	<p>Acronym for Cathode Ray Tube.</p> <p>A CRT is the video screen with which the computer communicates with you.</p>
<b>Cursor</b>	<p>A position indicator on the screen.</p> <p>The cursor is the flashing rectangle or thin line of light on the screen that indicates where the next character will be inserted or deleted.</p>
<b>Daisy Wheel Printer</b>	<p>A type of printer that prints characters by striking metal or plastic character images against a ribbon.</p>

<b>Data Communications</b>	Transmitting information from one computer/terminal to another.
<b>Data Transfer</b>	Sending data from one (part of a) system to another.
<b>Debug</b>	The process of finding and correcting errors in a program.
<b>Default Directory</b>	The directory the HP 150 assumes you want to use if you don't name one. (This is always the root directory if you haven't created subdirectories.)
<b>Directory</b>	A group of files on a disc. The table of contents or index to a group of files stored on a disc. A directory can be referred to as a root directory, default directory, or subdirectory.
<b>Disc Application</b>	A program that assists in the operation of the computer. Disc application programs generally perform housekeeping functions such as copying and sorting, and are usually supplied as standard software that is packaged with the computer.
<b>Disc</b>	A microcomputer's storage unit. A disc is a circular plate of magnetically coated material used to store computer information. A disc may be either floppy (flexible) or hard (fixed).
<b>Disc Drive</b>	A disc drive is a device which allows a computer to read data from (or write data to) a flexible or fixed disc.
<b>Display</b>	The video screen with which the computer communicates with you.
<b>Display Memory</b>	Memory used to display information on the screen. The HP 150 has 54 lines available for the screen display (2 pages).

<b>DOS</b>	<p>Acronym for Disc Operating System.</p> <p>DOS is a program that controls the communication between the microcomputer, the disc drive, and other peripheral units.</p>
<b>Dot-Matrix Printer</b>	<p>A type of impact printer that prints characters as a set of fine dots within a grid of rows and columns, called a matrix.</p>
<b>Drives</b>	<p>Disc drives read information from discs. An open slot indicates that a drive reads information from flexible discs. Grillwork indicates a fixed disc inside. Disc drives are labeled with letters and colors (A: B: C:).</p>
<b>Electronic Mail</b>	<p>The use of a computer to send and receive letters.</p>
<b>Emulator</b>	<p>An emulator is a combination of hardware and/or software that allows one computer to accept software developed for a different computer.</p>
<b>EPROM</b>	<p>Acronym for Erasable Programmable Read-Only Memory.</p> <p>An EPROM chip is a memory chip that can be programmed, erased, and reprogrammed.</p>
<b>File</b>	<p>A file is a collection of related records located together on a disc, or other memory device, and given a common name or label.</p>
<b>Firmware</b>	<p>A cross between hardware and software.</p> <p>Firmware is a computer program that is permanently stored in memory—usually on a ROM (Read-Only Memory) chip.</p>



**Fixed Disc**

Large capacity disc that holds either 5 mb, 10 mb, or 15 mb of information; this disc is fixed inside a disc drive.

**Function Keys**

Special keyboard keys labeled f1, f2, f3, ..., f8 that correspond to the lighted labels on the bottom of the screen.

**Formatting**

The process by which a disc is prepared to receive and store data.

Formatting is usually done by a special formatting or initialization program.

**FORTRAN**

Acronym for FORMula TRANslation.

FORTRAN is a high level computer language built around mathematical equations, used mainly for engineering and scientific work.

**Handshake**

A greeting between computers.

When one computer transmits data to another each transmission is ended with an electronic code that means "Did you get that OK"? The other machine answers with a signal that means "Yes I did, what's next?"

**Hardcopy**




A paper copy or printout of information.

**Hard Disc**

A disc made from a rigid, ceramic-like material with a magnetic coating.

Hard discs are enclosed permanently in dustfree, sealed cases, and are faster, more reliable, and have a larger memory storage capacity than floppy discs.

**Hard Reset**

Restarting the computer by turning it off and then on again, or by pushing   .

**Hardware**

The physical parts or equipment of the computer system.

**High Level Language**

Any programming language in which statements resemble normal human language. Some common high level languages are: BASIC, COBOL, FORTRAN, Pascal.



<b>IBM 3740 Format</b>	A single-sided, single-density format on 8 inch flexible discs that allows you to exchange data with IBM mainframes in many cases.
<b>Initialize</b>	Establish basic conditions for use. Format.
<b>Input</b>	The data or instructions that are put into the computer, or the process of entering data or instructions into the computer.
<b>Install</b>	Process of putting an HP application on a disc other than the master disc.
<b>Interface</b>	A link or connection between the computer and other hardware or software. Interfaces are composed of hardware and/or software.
<b>Interpreter</b>	A program that acts as a translator. An interpreter translates high level language into machine language, which the computer can recognize and execute. Interpreters are more convenient but less efficient than compilers.
<b>K</b>	Abbreviation for Kilobyte, a unit of measurement for memory storage. One Kbyte is equal to 1,024 bytes. Therefore, a 64K memory equals 65,536 bytes of stored data.
<b>Kilobyte</b>	More commonly referred to as K.
<b>Language</b>	A computer language is designed to tell a computer what it is to do, and how to perform a specific task. Programs can be written in either high level or low level languages. High level: COBOL, BASIC, FORTRAN, Pascal Low level: Assembly language Machine language
<b>Load</b>	To read data or programs into a computer.

**Local Mode**

In local mode, the HP 150 is neither a computer nor a terminal. Local mode is useful for printing the contents of the screen.

**Low Level Language**

A computer language that is closer to the microprocessor's native language of electrical signals and binary codes than to human language. Low level languages are more efficient and faster than high level languages.

**M**

More commonly known as a Megabyte.

**Machine Language**

Instructions written in the computer's "native language" of binary code (1's and 0's), which the computer is able to recognize and execute without the assistance of an interpreter or compiler.

**Main Frame**

A large computer, for example, the HP 3000. Though a personal computer and a mainframe have roughly the same speed and internal memory capacity, a main frame has the potential to serve many users as well as peripherals such as printers and external memory devices.

**Master Disc**

Discs shipped from HP with your original copies of application programs and the operating system on them.

**Megabyte**

One million bytes, more or less. Actually a megabyte, abbreviated Mbyte or M, is 1,048,576 bytes.

**Memory**

The size of the computer's brain.

Memory is the combination of chips and/or discs in which data is stored in the form of binary codes. Memory is measured in K (Kilobytes) or M (Megabytes).

You have at least 256K of memory in your HP 150, and as much as 640K.

<b>Menu</b>	<p>A table of contents.</p> <p>Menus are used in many software programs to allow the user to choose the program options available.</p>
<b>Microcomputer</b>	<p>Also known as a personal computer.</p> <p>A microcomputer is usually small, inexpensive, and designed to serve one user at a time.</p>
<b>Microprocessor</b>	<p>A computer on a chip.</p> <p>A microprocessor is a single chip which can interpret and execute instructions, perform arithmetic calculations, and retain information in its memory.</p>
<b>Minicomputer</b>	<p>An intermediate sized computer, for example, the HP 1000.</p> <p>Although a microcomputer and a minicomputer have roughly the same speed and internal memory capacity, a minicomputer can serve multiple users, and often has large capacity hard discs.</p>
<b>Mode</b>	<p>(See Remote Mode, Local Mode)</p>
<b>Modem</b>	<p>Acronym for MODulator/DEModulator</p> <p>A modem is a peripheral device that allows a computer to communicate over telephone lines.</p> <p>There are two types of modem: Acoustic Coupler, designed to hold a telephone headset on special outlets; and Hardwired, where the modem is part of the system's electronics with no external connections.</p>
<b>MS-DOS</b>	<p>Acronym for MicroSoft-Disc Operating System.</p> <p>MS-DOS is a popular single-user/multitasking operating system developed by Microsoft Corp.</p>
<b>Number Crunching</b>	<p>Using the computer to perform complicated numerical and arithmetic operations.</p>

**Object Code**

Object code is a program written in machine language and which is directly executable. Object code is generally produced when source code is compiled.

**On-Line**

Directly connected to the computer system. For example, a printer is on-line when it is used to print out computer data.

**Operating System**

The computer's housekeeper and manager. An operating system is software that controls the computer's operations, from the way the computer accepts data to the way it directs peripherals. Your operating system is MS-DOS.

**Output**

Information processed by the computer and displayed to the terminal, printer, or other similar peripherals.

**P.A.M.**

The Personal Applications Manager lists a menu of the available programs currently on the HP 150.

**Parity**

A count performed to check data in computer operations.

**PASCAL**

A high level programming language. Pascal is a general purpose programming language, which features English-based commands and an easily adapted structure. Pascal takes its name from the 17th century French mathematician and philosopher, Blaise Pascal.

**Path**

The name that indicates the location of a file. A file at the root directory of disc A: would be A:filename. A file at the subdirectory Tuesday on disc A: would be A:\Tuesday\filename.



<b>Peripheral</b>	<p>Hardware that is external to and controlled by the computer.</p> <p>Peripherals are so called because they are not part of the computer. Nevertheless, you can't use a computer without them. Commonly used peripherals include: disc drives, hard discs, keyboards, modem, printers.</p>
<b>Port</b>	<p>An electrical outlet.</p> <p>A port is the point where the electrical connection is made between the microcomputer and a peripheral.</p>
<b>Printer</b>	<p>A peripheral device that produces hardcopies of computer data.</p> <p>There are two basic types of printers:</p> <p>Dot-matrix: high speed, low quality; and</p> <p>Daisywheel: high quality, low speed.</p>
<b>Program</b>	<p>A set of instructions or steps telling the computer how to handle a problem or task.</p> <p>Programs are also known as software.</p>
<b>PROM</b>	<p>Acronym for Programmable Read-Only Memory.</p> <p>A PROM chip contains programs which are permanently encoded in the microcomputer, and which cannot be altered by the user.</p>
<b>RAM</b>	<p>Acronym for Random Access Memory.</p> <p>A RAM chip contains information which is temporarily stored in the microcomputer. Unlike ROM, information stored in RAM is erased when the computer is turned off.</p>
<b>Remote Mode</b>	<p>When an asterisk appears in <code>Remote Mode *</code>, the HP 150 is either a computer or terminal, depending on the Global Configurative setting Power-up.</p>



**ROM**

Acronym for Read-Only Memory.

A ROM chip contains information which is permanently stored in the microcomputer. Unlike RAM, information in ROM does not disappear when the computer is turned off, and can never be erased by the user.

**Root Directory**



A disc always contains a root directory—this directory is created when a disc is formatted. Applications are always installed at the root directory of a disc.

**Sector, Disc**

A triangular section of a disc surface. Sector addresses are established by the FORMAT program.

**Soft Reset**

Restarting the computer without turning the computer off and back on again.

To soft reset your personal computer, press two keys simultaneously: the  key and the  key.

**Software**

A computer program or set of programs.

This term was coined to contrast with hardware, which is the physical equipment and circuitry of a computer.

**Source Code**

A program written in high-level programming language.

Source code can be understood by the computer only after it has been compiled into object code.

**Spreadsheet**

A visual calculator.

An electronic spreadsheet is a software program, such as VisiCalc, that models a page of an accounting ledger.

Because of the simplicity and flexibility of this program, it is widely used in scientific, medical, and mathematical, as well as financial applications.

**Storage Unit**

Storage unit is the general term for any memory device capable of holding data to be retrieved later.

<b>Strap</b>	Settings formerly done by placing jumpers on pins. These settings are now done in configuration menus.
<b>Subdirectory</b>	A subgrouping of files on a disc. You can have a subdirectory of a root directory, and a subdirectory of a subdirectory.
<b>System Functions</b>	Some functions are built into the HP 150, and appear as lighted labels on the bottom of the screen.
<b>Terminal</b>	<p>A point of communication with a computer.</p> <p>A terminal usually consists of a keyboard, a screen and printer. The terminal is used to communicate with a computer which may be at another location.</p> <p>The HP 150 can be used as a terminal.</p>
<b>Wildcard</b>	A wildcard is a symbol (* or ?) used in place of characters when naming a file(s). A * means "any characters". A ? means "any <i>one</i> character".
<b>Work Disc</b>	A disc containing a copy of a Master Disc.
<b>Write Protect</b>	<p>A method of preventing information from being erased from or written onto a disc.</p> <p>To write-protect a 3½" disc, remove the tab from the backside and insert it into the slot provided.</p>

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
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



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

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

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